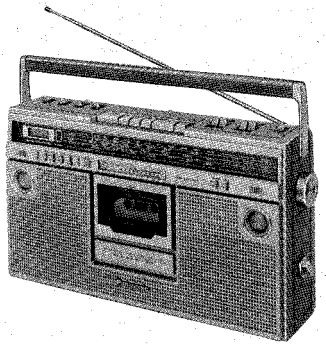
ORDER NO. RD8003-1751C

Service Manual

Radio Cassette

RX-5220LS

FM/LW/MW/SW Stereo Radio Cassette



RX-1750LS MECHANISM SERIES

■ SPECIFICATIONS

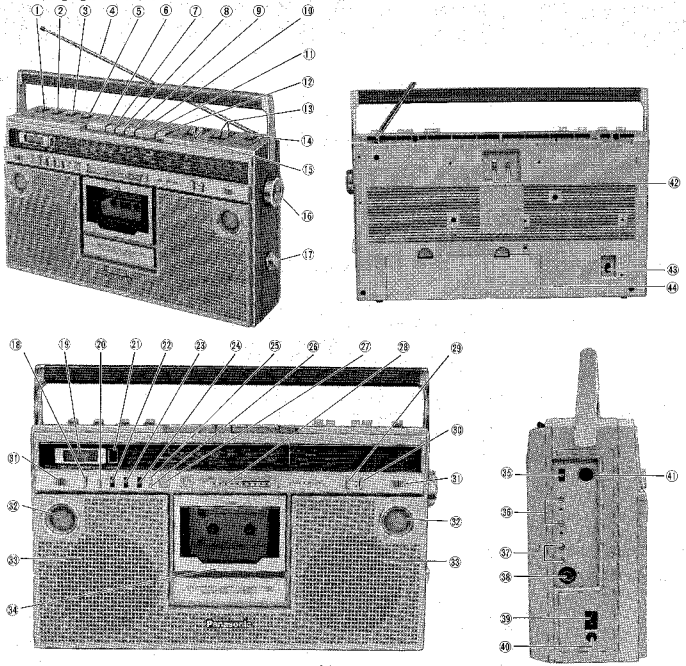
Power Requirement:	AC; 100~110/115~127/200~220/230~250V, 50/60Hz Battery, 12V (eight D size dry batteries) for radio. Battery 3 V (two AA size penlight Batteries) for clock Carboat battery; with optional car/boat adaptor RP-952)
Power consumption;	27W
Power Output:	12W (6W×2) . . . (DC max.)
Frequency Range:	70~11,000Hz (with normal tape) 70~13,000Hz (with CrO_2 tape) 70~13,000Hz (with FeCr tape)
Recording System:	AC bias, MAGNET erase
Tape Speed:	4.8cm/s, ($1^7/_8$ ips)
Wow and Flutter:	0.35% (RMS)
Program Time:	1 hour with C-60 cassette tape
Track System:	4-track stereo recording and playback
Input:	MIC; sensitivity 0.32mV/applicable microphone impedance 200~600Ω (recommended microphone RP-8135) DC IN; 13.2V
Output:	EXT SP; 3~8Ω HEADPHONES; 8Ω
REC/PB Connection:	5P DIN type IN; 0.32mV (2.7kΩ over) OUT; 0.36V (4.7kΩ under)
Speaker:	Woofer; 12cm ($4^{21}/_{32}$") PM Dynamic speaker (3Ω) Tweeter; 3cm ($1^{7}/_{32}$") PM Dynamic speaker (4Ω)
Radio Frequency Range:	FM; 87.5~108MHz LW; 145~285kHz (2060~1060m) MW; 520~1610kHz (577~186m) SW; 5.9~18MHz (50.8~16.7m)
Intermediate Frequency:	FM; 10.7MHz AM; (LW/MW/SW); 455kHz
Sensitivity:	FM; 5μV/50mW output LW; 160μV/m/50mW output MW; 75μV/m/50mW output SW; 6μV/50mW output
Dimensions:	467mm(W)×267mm(H)×150mm(D) [$18^{3}/_{8}$"(W)×$10^{1}/_{2}$"(H)×$5^{15}/_{16}$"(D)]
Weight:	5.4kg (11 lb. 14 oz.) without batteries

Specifications are subject to change without notice.

Panasonic

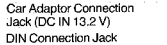
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

LOCATION OF CONTROLS AND COMPONENTS



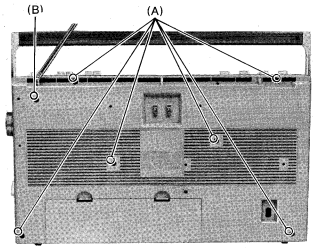
[Fig. 1]

① Timer Switch (ON/OFF)
② Tape Selector (NORMAL/FeCr/CrO₂)
③ Meter Selector (OFF/TUNE, BATT/LEVEL
④ Telescopic Antenna
⑤ Function Selector (OFF, TAPE/RADIO)
⑥ Eject Button
⑦ Stop Button
⑧ Fast Forward/Cue Button
⑨ Rewind/Review Button
⑩ Playback Button
⑪ Record Button
⑫ Pause/Timer Stand-by Button
⑬ Volume Controls
⑭ FM Mode Selector (MONO/STEREO)
⑮ Tone Controls
⑯ Tuning Control
⑰ Band Selector (FM/LW/MW/SW)
⑱ Counter Reset Button
⑲ LCD (Liquid Crystal Display)
⑳ Time Set/Light Button
㉑ FM Stereo Indicator
㉒ Function Switch (COUNTER/CLOCK)
㉓ Sleep/Auto Selector (SLEEP/AUTO)
㉔ Clock Display Switch (SLEEP/TIME/AUTO)
㉕ Hour Adjust Button
㉖ Minute Adjust Button
㉗ Doze/Sleep Cancel Button
㉘ LED Meter
㉙ Memory Rewind Switch (ON/OFF)
㉚ Chirp Button (ON/OFF)
㉛ Built-in Microphones
㉜ Tweeters [3 cm (1⅛"), 4Ω]
㉝ Woofers [12 cm (4¾"), 3Ω]
㉞ Cassette Compartment
㉟ Beat Proof Switch (I, II, III)
㊱ Microphone Jacks (0.32 mV)
㊲ External Speaker Jacks (3~8Ω)
㊳ Headphones Jack (8Ω)
㊴ AC Socket
㊵ Car Adaptor Connection Jack (DC IN 13.2 V)
㊶ DIN Connection Jack IN 0.32 mV (2.7 kΩ over) OUT 0.36 V (4.7 kΩ under)
㊷ External Antenna Terminals

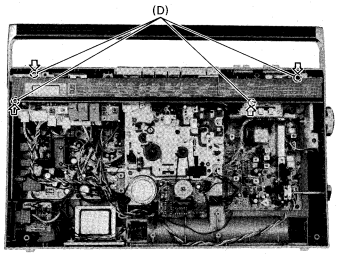


㊸ AC Voltage Selector
㊹ Battery Compartment

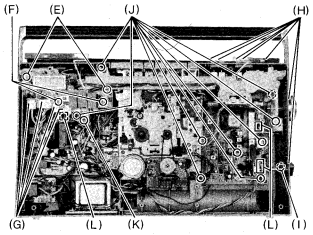
DISASSEMBLY INSTRUCTIONS



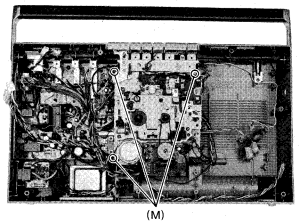
[Fig. 2]



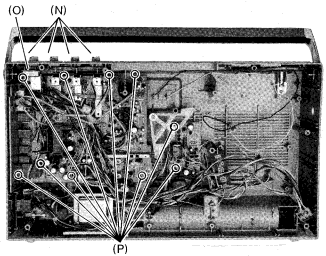
[Fig. 3]



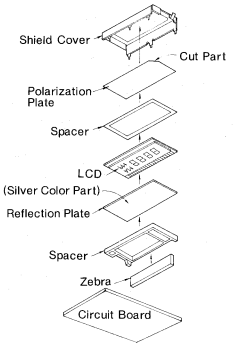
[Fig. 4]



[Fig. 5]



[Fig. 6]

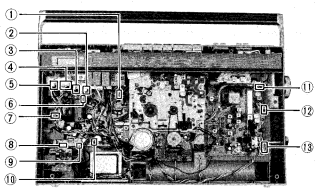


[Fig. 7]

Procedure	To remove—.	Remove—.	Shown in fig—.
1	Front panel	Screw 3.5×50 ..... (A)×6	2
2	Telescopic antenna	Screw 3×15 ..... (B)×1	2
3	Dial scale	Push the catch in the direction of arrows ..... (D)×4	3
4	Clock circuit board	Screws 3×10 ..... (E)×2	4
5		Screws 3×6 ..... (F)×2	4
6		Sockets ..... (G)×4	4
7	Radio circuit board	Knob ..... (H)×7	4
8		Circlip ..... (I)×1	4
9		Red screws ..... (J)×9	4
10		Unsolder ..... (K)×1	4
11		Sockets ..... (L)×3	4
12	Mechanism	Red screws ..... (M)×3	5
13	Audio circuit board	Knob ..... (N)×4	6
14		Pull out timer switch ..... (O)×1	6
15		Red screws ..... (P)×10	6

■ CONNECTOR POSITION

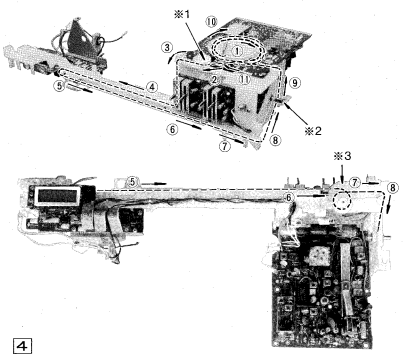
① Record/playback head connector
② Stereo eye connector
③ Timer switch connector
④ Control connector
⑤ Counter connector
⑥ Tone connector
⑦ Built-in microphones connector
⑧ LED meter connector
⑨ Speakers connector
⑩ Power supply connector
⑪ Tone connector
⑫ External antenna connector
⑬ Radio circuit connector

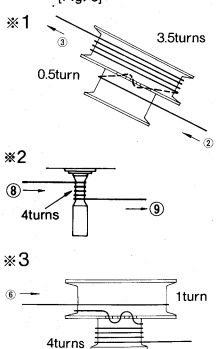


[Fig. 8]

DIAL THREADING

■ DIAL CORD LENGTH: 2200 mm



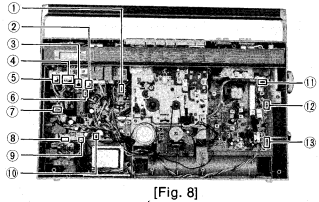


[Fig. 9]

Procedure	To remove—.	Remove—.	Shown in fig—.
1	Front panel	Screw 3.5×50 ..... (A)×6	2
2	Telescopic antenna	Screw 3×15 ..... (B)×1	2
3	Dial scale	Push the catch in the direction of arrows ..... (D)×4	3
4	Clock circuit board	Screws 3×10 ..... (E)×2	4
5		Screws 3×6 ..... (F)×2	4
6		Sockets ..... (G)×4	4
7	Radio circuit board	Knob ..... (H)×7	4
8		Circlip ..... (I)×1	4
9		Red screws ..... (J)×9	4
10		Unsolder ..... (K)×1	4
11		Sockets ..... (L)×3	4
12	Mechanism	Red screws ..... (M)×3	5
13	Audio circuit board	Knob ..... (N)×4	6
14		Pull out timer switch ..... (O)×1	6
15		Red screws ..... (P)×10	6

■ CONNECTOR POSITION

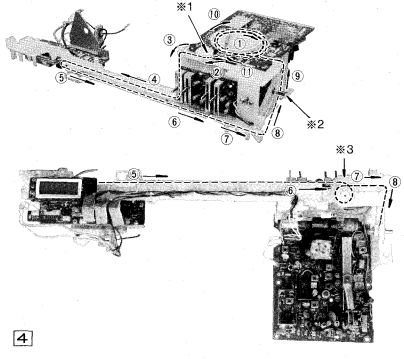
① Record/playback head connector
② Stereo eye connector
③ Timer switch connector
④ Control connector
⑤ Counter connector
⑥ Tone connector
⑦ Built-in microphones connector
⑧ LED meter connector
⑨ Speakers connector
⑩ Power supply connector
⑪ Tone connector
⑫ External antenna connector
⑬ Radio circuit connector

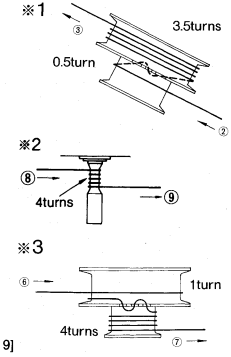


[Fig. 8]

DIAL THREADING

■ DIAL CORD LENGTH: 2200 mm

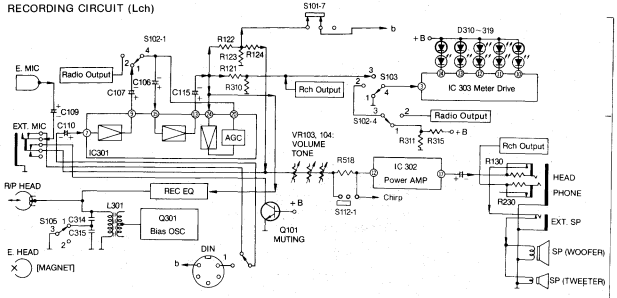




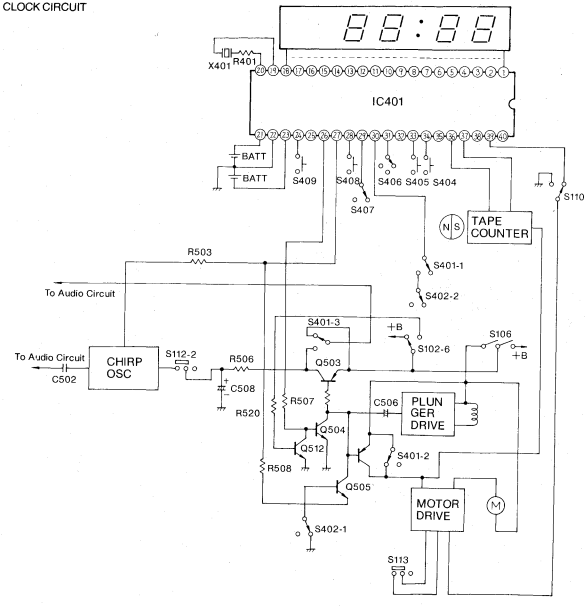
[Fig. 9]

BLOCK DIAGRAM

RECORDING CIRCUIT (Lch)

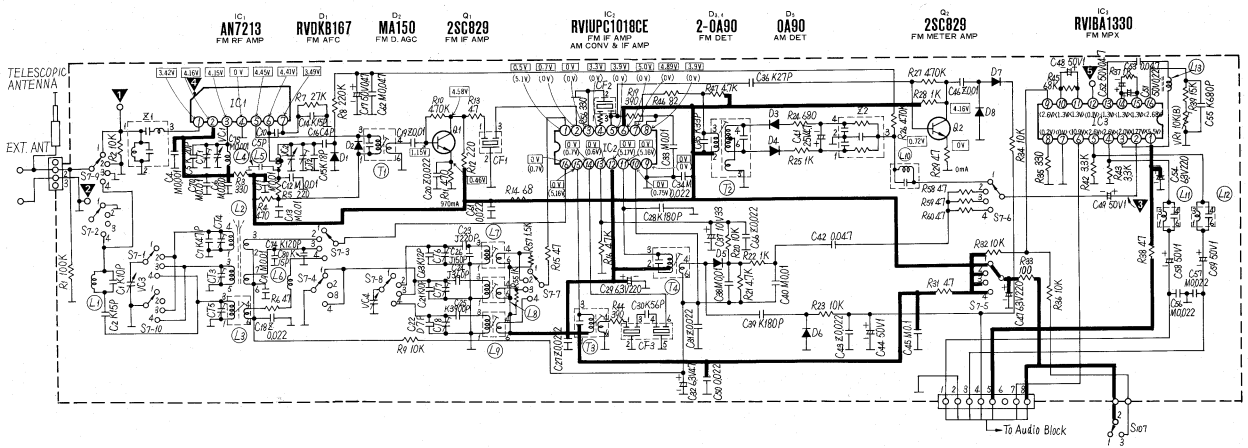


CLOCK CIRCUIT



RX-5220LS RX-5220LS

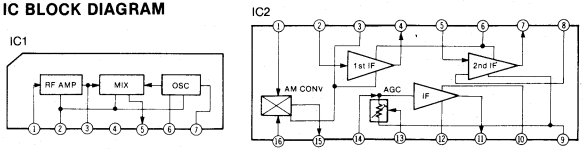
SCHEMATIC DIAGRAM (RADIO CIRCUIT) MODEL RX-5220LS


IC1 AN7213 FM RF AMP
D1 RVDKB167 FM AFC
D2 MA150 FM D. AGC
Q1 2SC829 FM IF AMP
IC2 RVIUPC1018CE FM IF AMP AM CONV & IF AMP
D3,4 2-0A90 FM DET
D5 0A90 AM DET
Q2 2SC829 FM METER AMP
IC3 RVIBA1330 FM MPX
D6 0A90 AM METER RECT
D7,8 0A90 FM METER RECT
TELESCOPIC ANTENNA
EXT. ANT
To Audio Block
SIGT

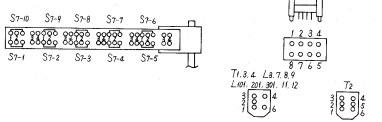
Notes:

1. S7-1~S7-10: Band selector switch in "FM" position.
   (1...FM, 2...LW, 3...MW, 4...SW)
2. S107: FM mode switch (shown in stereo position).
   1...STEREO, 3...MONAURAL
3. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
   [ ]...FM Position, ( )...AM Position < >...FM stereo position
4. Battery current: No signal 120mA
   Maximum output (Radio) 1.1A
5. VR1.....VCO Oscillator Frequency Adjust.
6. The mark (▼) shows test point. e.g. ▼ = test point 1.

IC BLOCK DIAGRAM



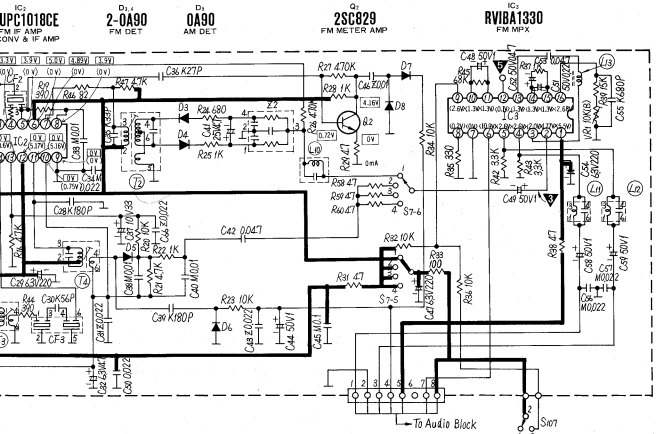
BOTTOM VIEW

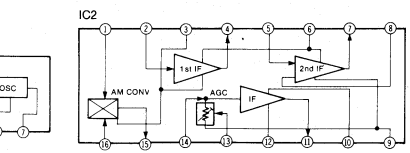


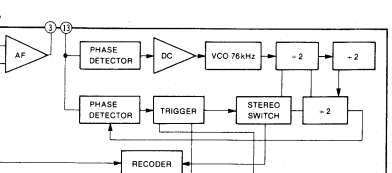
IC2, 3	Cathode / Anode	D2
Q1, 2	Cathode / Anode	D3, 4
IC1	Anode / Cathode	D1
	Cathode / Anode	D5, 6, 7, 8

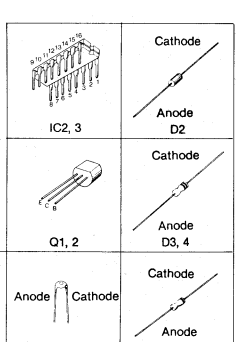
IC3		
FM STEREO		
1	5.5V	5
2	1.77V	6
3	2.0V	7
4	2.6V	8

I (RADIO CIRCUIT) MODEL RX-5220LS

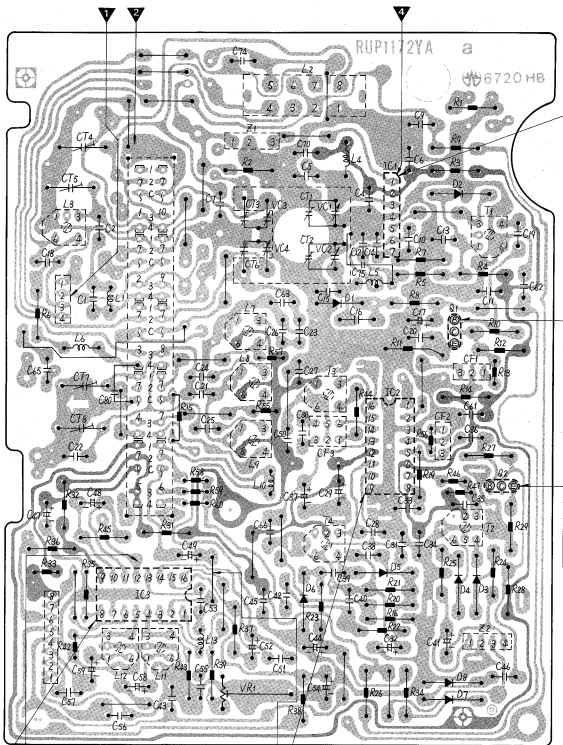

IC1 UPC1018CE FM IF AMP CONV & IF AMP
D14 2-0A90 FM DET
D3 0A90 AM DET
Q7 2SC829 FM METER AMP
IC3 RV1BA1330 FM MPX
D4 0A90 AM METER RECT
D13 0A90 FM METER RECT
To Audio Block
S101







RADIO CIRCUIT BOARD



IC1

FM	
1	3.42V
2	4.16V
3	4.15V
4	0 V
5	4.45V
6	4.41V
7	3.49V

Q1

FM	
C	4.58V
B	1.15V
E	0.46V
Ie	970mA

Q2

FM	
C	4.16V
B	0.72V
E	0 V
Ie	0mA

IC3

FM STEREO POSITION							
1	5.5V	5	2.6V	9	2.6V	13	1.3V
2	1.77V	6	10.9V	10	1.3V	14	1.3V
3	2.0V	7	0 V	11	1.3V	15	1.3V
4	2.6V	8	0.2V	12	0.1V	16	2.68V

IC2

1	FM	0.5V	5	FM	3.9V	9	FM	0 V	13	FM	0 V	16	FM	0 V	
	AM	5.1V		AM	0 V		AM	0 V		AM	0.6V		AM	0.6V	
2	FM	0.7V	6	FM	5.0V	10	FM	0 V	14	FM	0 V				
	AM	0 V		AM	0 V		AM	0.75V		AM	0.7V				
3	FM	0 V	7	FM	4.89V	11	FM	0 V	15	FM	0 V				
	AM	0 V		AM	0 V		AM	5.16V		AM	5.16V				
4	FM	3.3V	8	FM	3.9V	12	FM	0 V	16	FM	0 V				
	AM	0 V		AM	0 V		AM	5.17V		AM	0.7V				

ALIGNMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set tone control to center.
3. Set band switch to MW, LW, SW or FM.
4. Set tape/radio selector to radio.
5. Set power source voltage to 12V DC.
6. Output of signal generator should be no higher than necessary to obtain an output reading.
7. Set timer switch to OFF.

■ LW, MW, AND SW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
			AM IF ALIGNMENT				
(1)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. at 400 Hz	Point of non-interference.	Output meter across voice coil	T3 (AM 1st IFT) T4 (AM 2nd IFT)	Adjust for maximum output.
			LW-RF ALIGNMENT				
(2)	LW	〃	145 kHz	145 kHz [11.2mm ($^{9}/_{32}$")]	Output meter across voice coil	L7 (LW OSC Coil) (*1) L2 (LW ANT Coil)	Adjust for maximum output. Adjust L2 by moving coil bobbin along ferrite core.
(3)	LW	〃	285 kHz	285 kHz [166 mm ($6^{17}/_{32}$")]	〃	CT6 (LW OSC Trimmer) CT4 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
	(*1) Cement antenna bobbin with wax after completing alignment.						
			MW-RF ALIGNMENT				
(4)	MW	〃	550 kHz	550 kHz [12.9 mm ($^{1}/_{2}$")]	Output meter across voice coil	L8 (MW OSC Coil) (*2) L2 (MW ANT Coil)	Adjust for maximum output. Adjust L2 by moving coil bobbin along ferrite core.
(5)	MW	〃	1,500 MHz	1,500 kHz [171.1 mm ($6^{23}/_{32}$")]	〃	CT7 (MW OSC Trimmer) CT3 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
	(*2) Cement antenna bobin with wax after completing alignment.						
			SW-RF ALIGNMENT				
(6)	SW	Connect to EXT ant. terminal through ceramic capacitor (10 PF). Negative side to earth.	6 MHz	6 MHz [8 mm ($^{5}/_{16}$")]	Output meter across voice coil	L9 (SW OSC Coil) L3 (SW ANT Coil)	Adjust for maximum output.
(7)	SW		18 MHz	18 MHz [188 mm ($7^{13}/_{32}$")]	〃	CT8 (SW OSC Trimmer) CT5 (SW ANT Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
(1)	FM	Connect to test point ▼ through 0.001μF. Negative side to earth.	10.7 MHz	Point of non-interference.	Connect vert. amp. of scope to test point ▼. Negative side to test point ▼.	T1 (FM IFT) (Primary)	Adjust for maximimum amplitude. (Refer to fig. 12.)
(2)	FM	〃	〃	〃	〃	T2 (FM IFT) (Secondary)	Adjust for maximum amplitude. (Refer to fig. 13.)
			FM-RF ALIGNMENT				
(3)	FM	Connect to test point ▼ through FM dummy antenna. (Refer to fig. 14.)	87.5 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L5 (FM OSC Coil)	(*3) Adjust for maximum output.
(4)	FM	〃	90 MHz	90 MHz [26.1mm ($1^{1}/_{32}$")]	〃	L4 (FM TUNE Coil)	(*3) Adjust for maximum output.
(5)	FM	〃	106 MHz	106 MHz [168mm ($6^{5}/_{8}$")]	〃	CT2 (FM OSC Trimmer) CT1 (FM TUNE Trimmer)	(*3) Adjust for maximum output. Repeat steps. (3) – (5).
	(*3) Three output responses will be present; proper tuning is the center frequency.						

■ LED METER ALIGNMENT

ITEM	ADJUSTMENT	REMARKS
Battery check	VR301	1. Supply DC 9.3 V through the DC IN jack. 2. Adjust VR301 so that the 5th LED from right begins to illuminate.

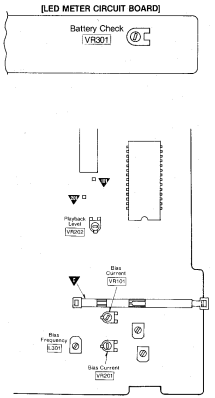
■ SEPARATION ALIGNMENT

ITEM	SIGNAL 90MHz, 60dB SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	—	▼...(+) side ▼...(−) side	VR1	19kHz	Adjust VR1 for 19kHz (±200Hz) reading on electronics counter.

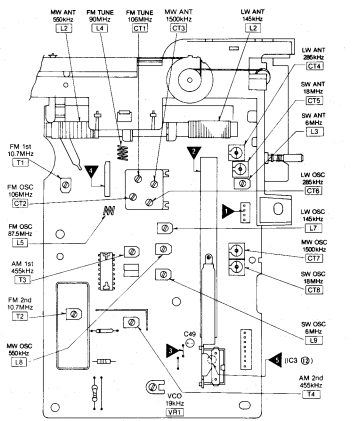
■ AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Bias current	—	(Lch) ▼ (Rch) ▼ (Earth) ▼	4.1±0.2mV (Use CrO_2 tape)	VR101 (Lch) VR201 (Rch)	Record mode Beat Proof → I
Bias oscillation frequency	—	▼ ▼	47.5 kHz±0.3 kHz (Use CrO_2 tape)	L301	Record mode (Beat Proof → I)
Playback level	QZZCFM (315 Hz, 0dB)	Speaker	—	VR202 (Rch)	Playback mode

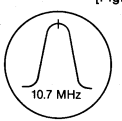
ADJUSTMENT PARTS LOCATION



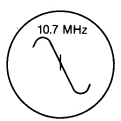
[Fig. 10]



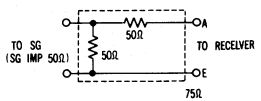
[Fig. 11]



[Fig. 12]



[Fig. 13]



[Fig. 14] FM Dummy Antenna

witch to OFF.

EMARKS

for maximum

for maximum
Adjust L2 by
coil bobbin
errite core.

for maximum

steps (2)

for maximum
Adjust L2 by
coil bobbin
errite core.

for maximum

steps (4)

for maximum

for maximum

steps (6)

EMARKS

maximimum
ig. 12.)

maximum
ig. 13.)

for maxi-
output.

t for maxi-
output.

t for maxi-
output.
at steps.
5).

■ LED METER ALIGNMENT

ITEM	ADJUSTMENT	REMARKS
Battery check	VR301	1. Supply DC 9.3 V through the DC IN jack. 2. Adjust VR301 so that the 5th LED from right begins to illuminate.

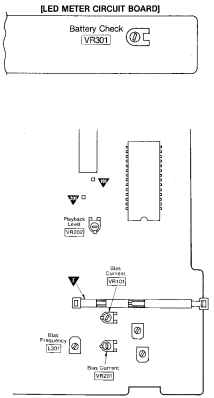
■ SEPARATION ALIGNMENT

ITEM	SIGNAL 90MHz, 60dB SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	—	▼...(+) side ▼...(−) side	VR1	19kHz	Adjust VR1 for 19kHz (±200Hz) reading on electronics counter.

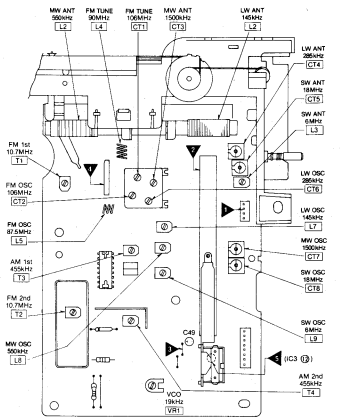
■ AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Bias current	—	(Lch) ▼ (Rch) ▼ (Earth) ▼	4.1±0.2mV (Use CrO_2 tape)	VR101 (Lch) VR201 (Rch)	Record mode Beat Proof → I
Bias oscillation frequency	—	▼ ▼	47.5kHz±0.3kHz (Use CrO_2 tape)	L301	Record mode (Beat Proof → I)
Playback level	QZZCFM (315Hz, 0dB)	Speaker	—	VR202 (Rch)	Playback mode

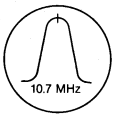
ADJUSTMENT PARTS LOCATION



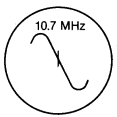
[Fig. 10]



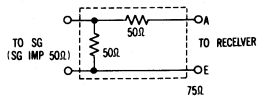
[Fig. 11]



[Fig. 12]

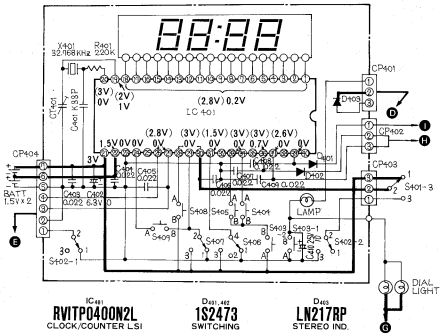


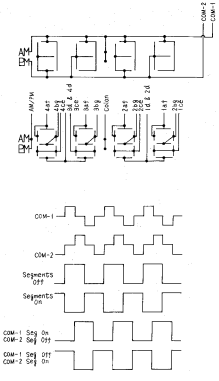
[Fig. 13]

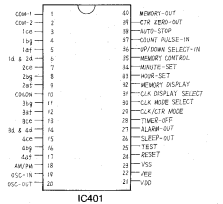


[Fig. 14] FM Dummy Antenna

SCHEMATIC DIAGRAM (CLOCK CIRCUIT) MODEL RX-5220LS







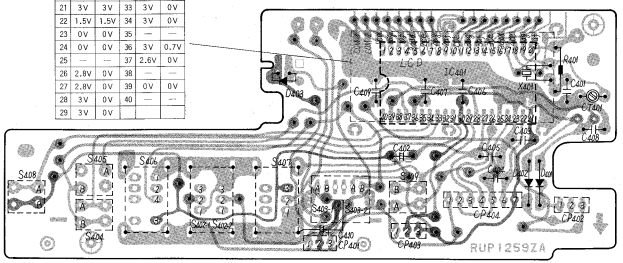
Notes:

1. S401-1~S401-3: Auto ON/OFF switch in "OFF" position.
2. S402-1~S402-2: Auto/Sleep switch in "AUTO" position.
3. S403-1, S403-2: Time set/light switch.
4. S404: Minute set switch.
5. S405: Hour set switch.
6. S406: Clock display switch in "TIME" position.
7. S407: Function switch in "CLOCK" position.
   (①. . . clock, ②. . . counter)
8. S408: Doze/Sleep cancel switch.
9. S409: Counter reset switch.
10. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery. ( ). . . . . High position ⎍ . . . High ⎍ . . . Low

CLOCK CIRCUIT BOARD

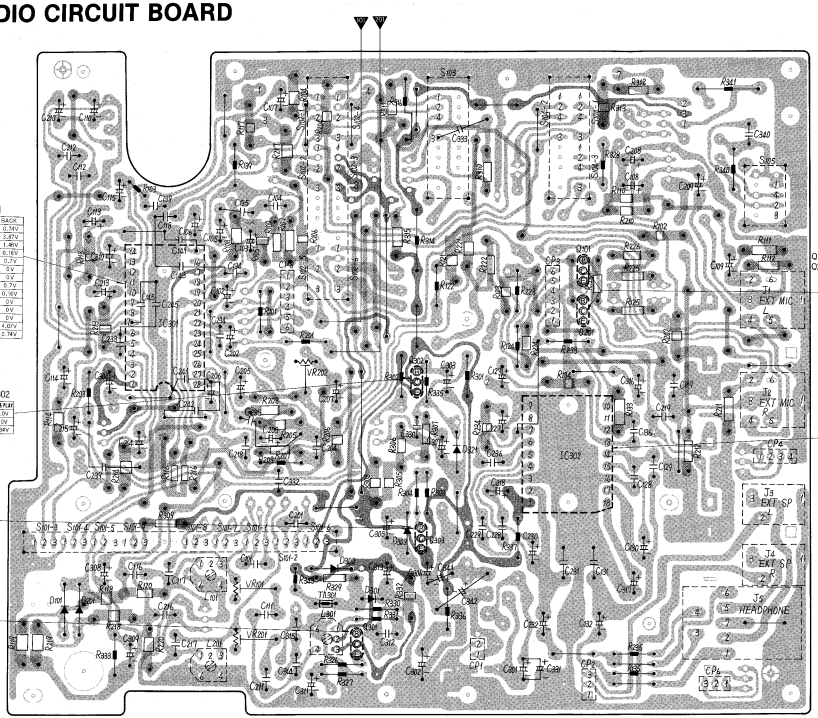
IC401

	High	Low		High	Low
1~16	2.8V	0.2V	30	3V	0V
19	2V	1V	31	1.5V	0V
20	3V	0V	32	—	—
21	3V	3V	33	3V	0V
22	1.5V	1.5V	34	3V	0V
23	0V	0V	35	—	—
24	0V	0V	36	3V	0.7V
25	—	—	37	2.6V	0V
26	2.8V	0V	38	—	—
27	2.8V	0V	39	0V	0V
28	3V	0V	40	—	—
29	3V	0V			

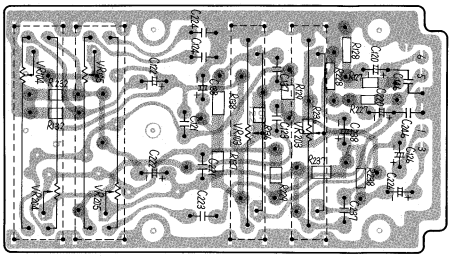


RX-5220LS RX-5220LS

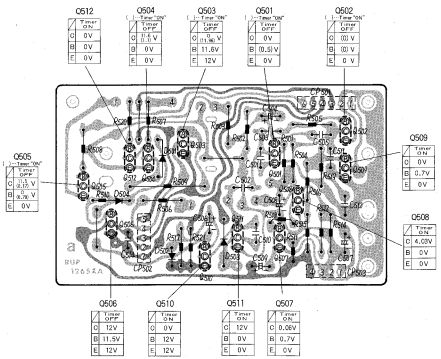
AUDIO CIRCUIT BOARD



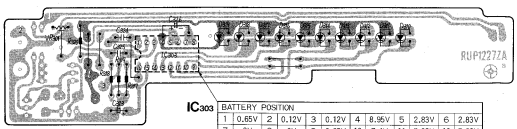
TONE CIRCUIT BOARD



CONTROL CIRCUIT BOARD



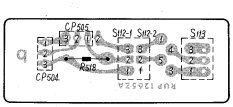
LED METER CIRCUIT BOARD

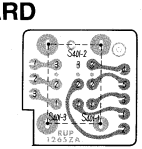


IC303

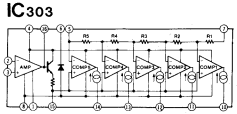
BATTERY POSITION											
1	0.65V	2	0.12V	3	0.12V	4	8.95V	5	2.83V	6	2.83V
7	0V	8	0V	9	0.23V	10	7.4V	11	5.82V	12	5.82V
13	7.4V	14	7.4V	15	3.14V	16	3.93V				

SWITCH CIRCUIT BOARD



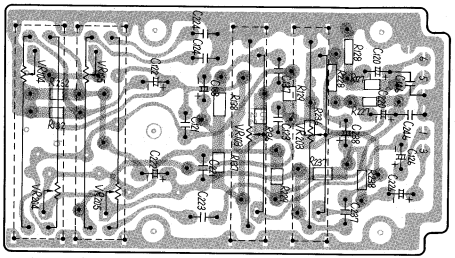


IC303

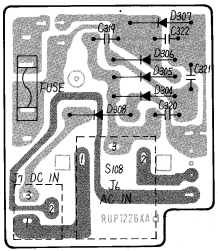


IC605,606

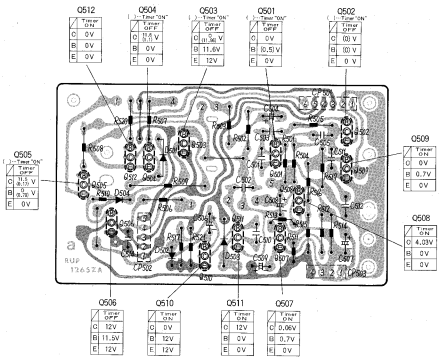
TONE CIRCUIT BOARD



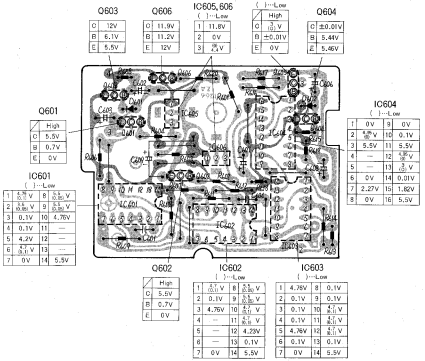
POWER CIRCUIT BOARD



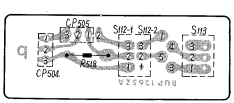
CONTROL CIRCUIT BOARD

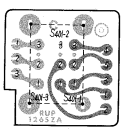


COUNTER CIRCUIT BOARD

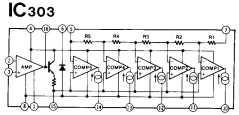


SWITCH CIRCUIT BOARD



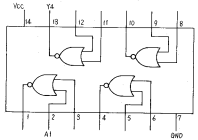


IC303

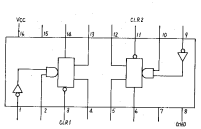


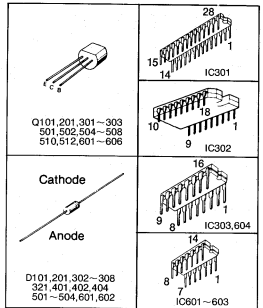
IC605,606

IC601,602,603

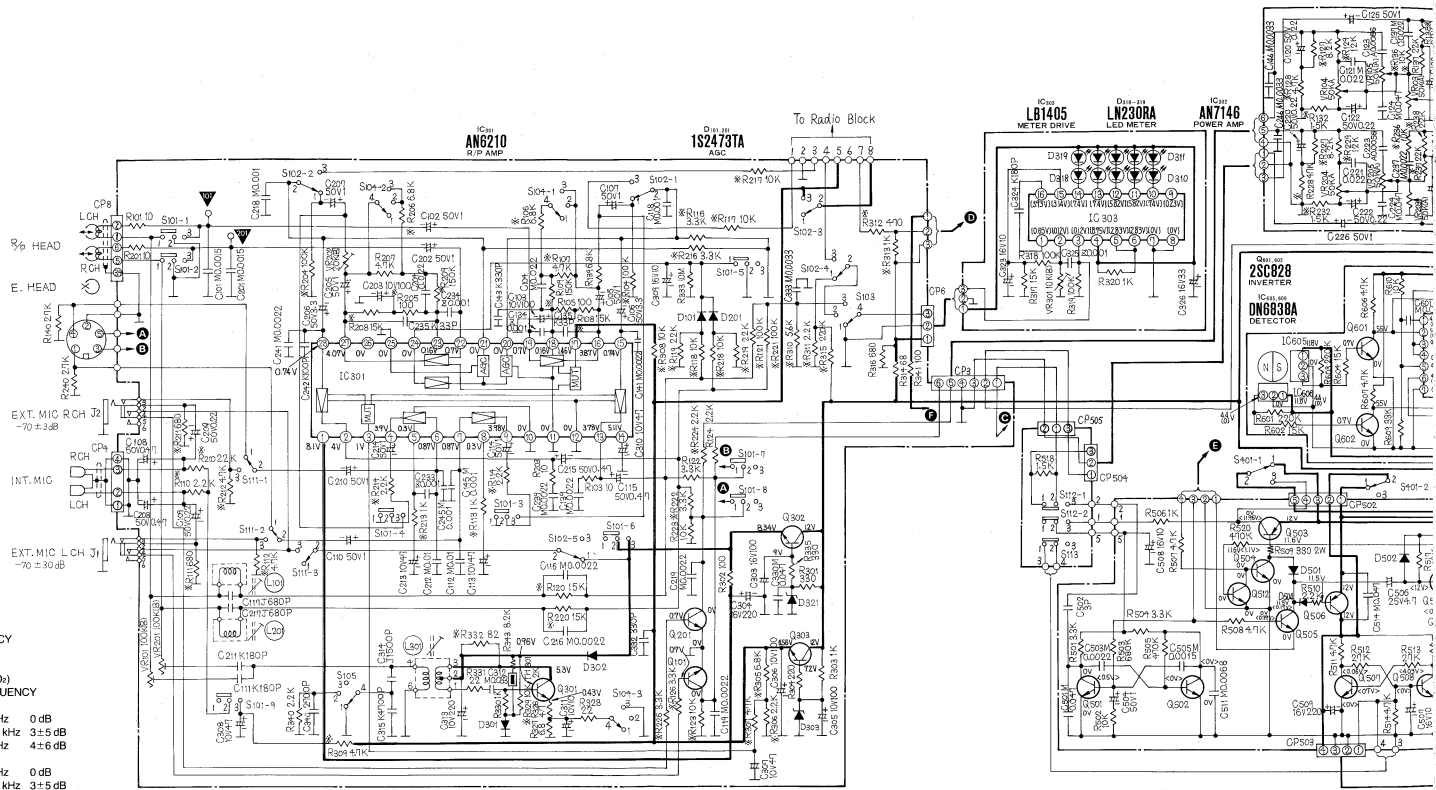


IC604





SCHEMATIC DIAGRAM (AUDIO CIRCUIT) MODEL RX-5220LS



BIAS FREQUENCY
54±1 kHz
BIAS VOLTAGE
4±0.2 mV (CrO_2)
OVERALL FREQUENCY RESPONSE

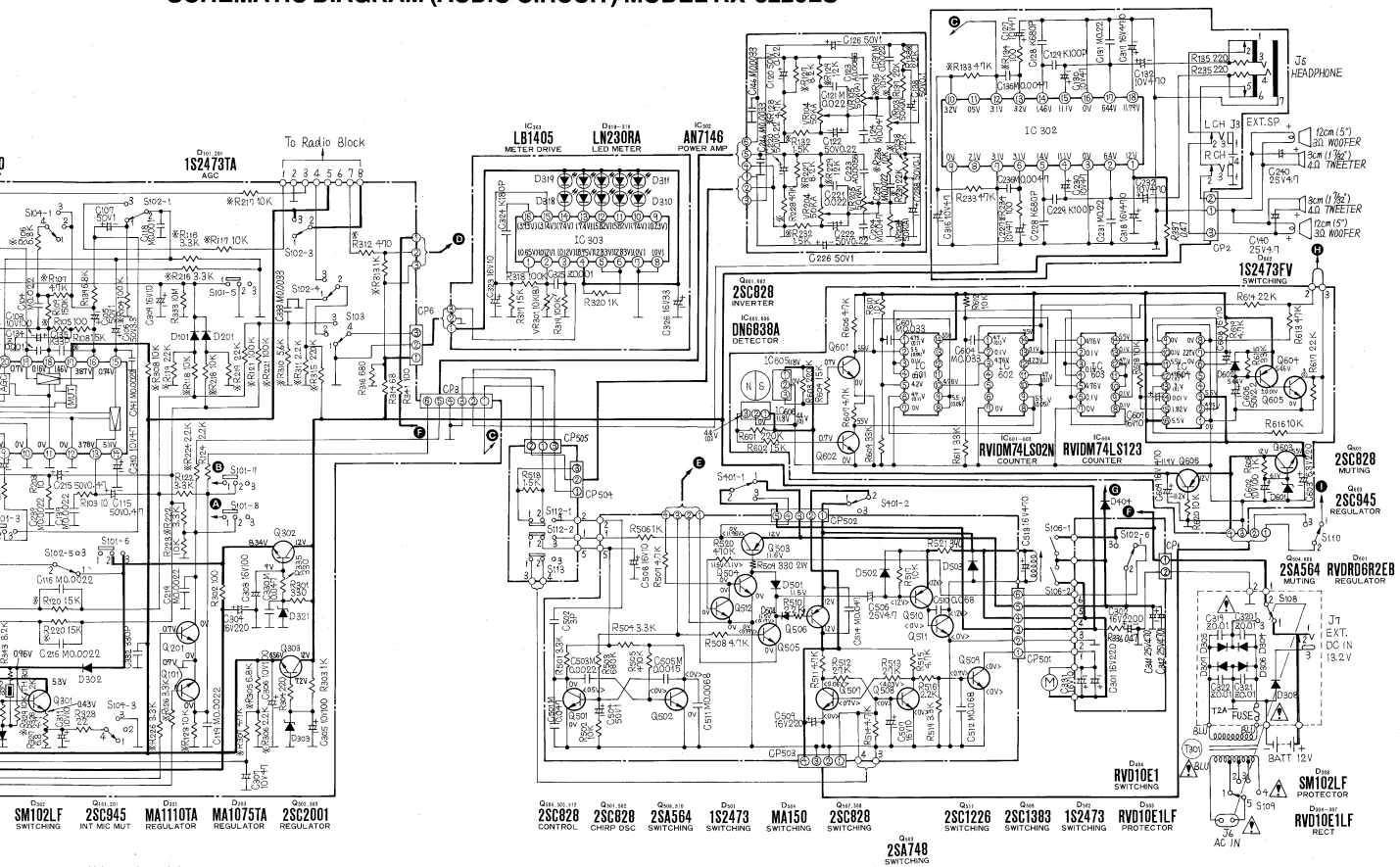
Normal	1 kHz	0 dB
	125 kHz	3±5 dB
	6 kHz	4±6 dB
CrO_2	1 kHz	0 dB
	125 kHz	3±5 dB
	6 kHz	4±6 dB

Notes:

1. S101-1~S101-9 ..... Record/playback switch in "playback" position.
2. S102-1~S102-6 ..... Function switch in "TAPE" position.
3. S103 ..... Meter switch in "OFF" position.
4. S104-1~S104-3 ..... Tape select switch in "NORMAL" position.
5. S105 ..... Beat proof switch in "I" position.
6. S106-1, S106-2 ..... Motor ON/OFF switch in "OFF" position.
7. S108 ..... AC/DC select switch in "DC" position.
8. S109 ..... Voltage select switch.
9. S110 ..... FF, play/rewind switch in "rewind" position.
10. S111-1~S111-3 ..... DIN/MIC switch in "DIN" position. (1 . . . DIN, 3 . . . MIC)
11. S112-1, S112-2 ..... Chirp ON/OFF switch in "OFF" position.
12. S113 ..... Memory rewind switch in "OFF" position.
13. VR101, 201 ..... Bias current adjustment VR.
14. VR202 ..... Playback level adjustment VR.
    VR103, 203 ..... Volume control.
    VR104, 204, 105, 205 . . . Tone control.
    VR301 ..... Meter level adjustment VR.
15. The mark (▼) shows test point. e.g.,▼=Test point 1.
16. DC voltage measurements are taken with electronics voltmeter from negative terminal of batte
    < > . . . Timer-ON [ ] . . . Battery position, Q101, 201, 301 . . . Record position.

RX-5220LS

SCHEMATIC DIAGRAM (AUDIO CIRCUIT) MODEL RX-5220LS



. . . . . Voltage select switch.
. . . . . FF, play/rewind switch in "rewind" position.
~S111-3 . . . . . DIN/MIC switch in "DIN" position. (1 . . . DIN, 3 . . . MIC)
, S112-2 . . . . . Chirp ON/OFF switch in "OFF" position.
. . . . . Memory rewind switch in "OFF" position.
, 201 . . . . . Bias current adjustment VR.

VR202 . . . . . Playback level adjustment VR.
VR103, 203 . . . . . Volume control.
VR104, 204, 105, 205 . . . . Tone control.
VR301 . . . . . Meter level adjustment VR.

14. The mark (▼) shows test point. e.g.▼=Test point 1.
15. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
< > . . . Timer-ON [ ] . . . Battery position, Q101, 201, 301 . . . Record position.

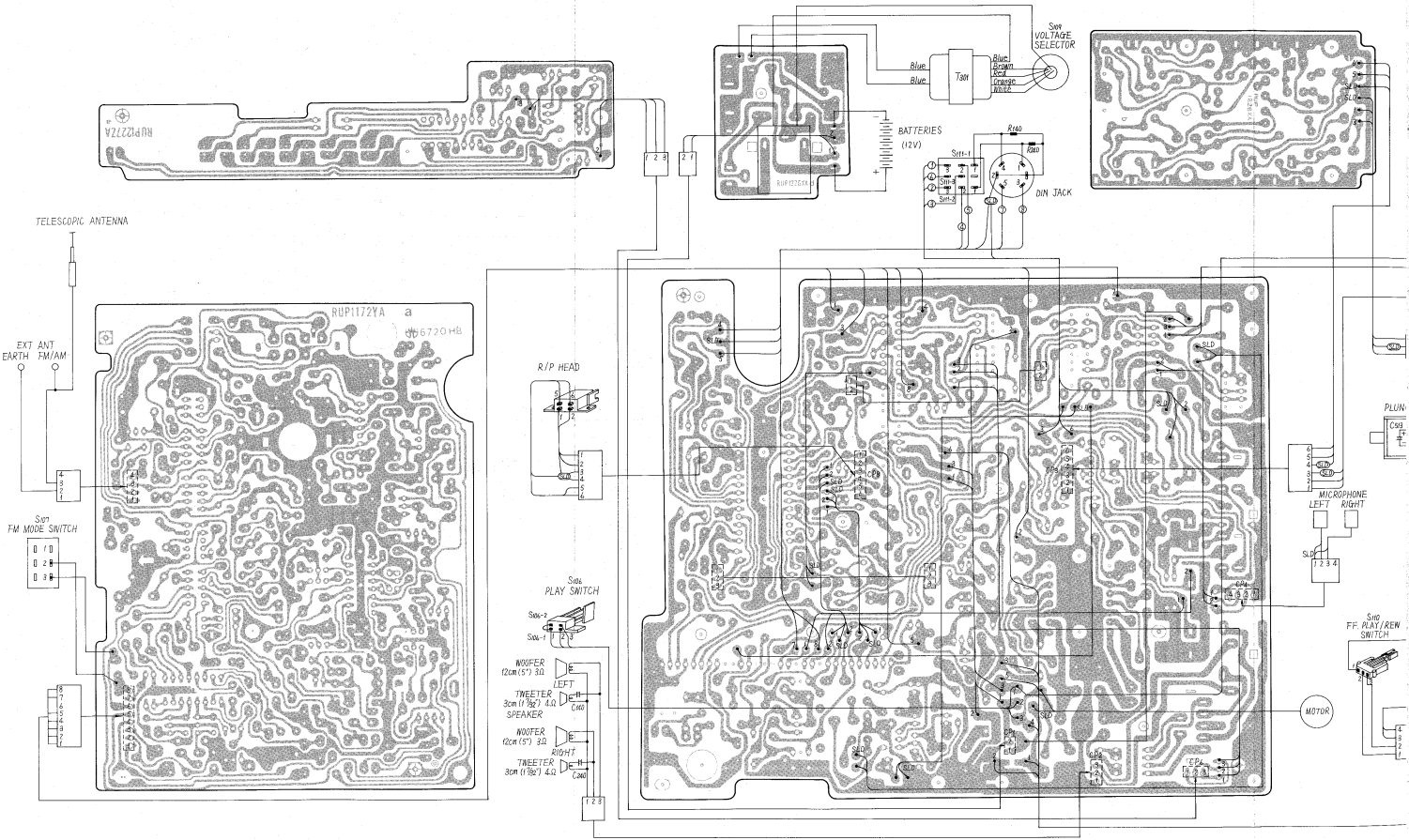
. . . Low . . . High
. . . . Low

16. Battery current: No signal . . . . . 120 mA
Maximum (Radio) 1.1A
Maximum (Tape) 1.3A

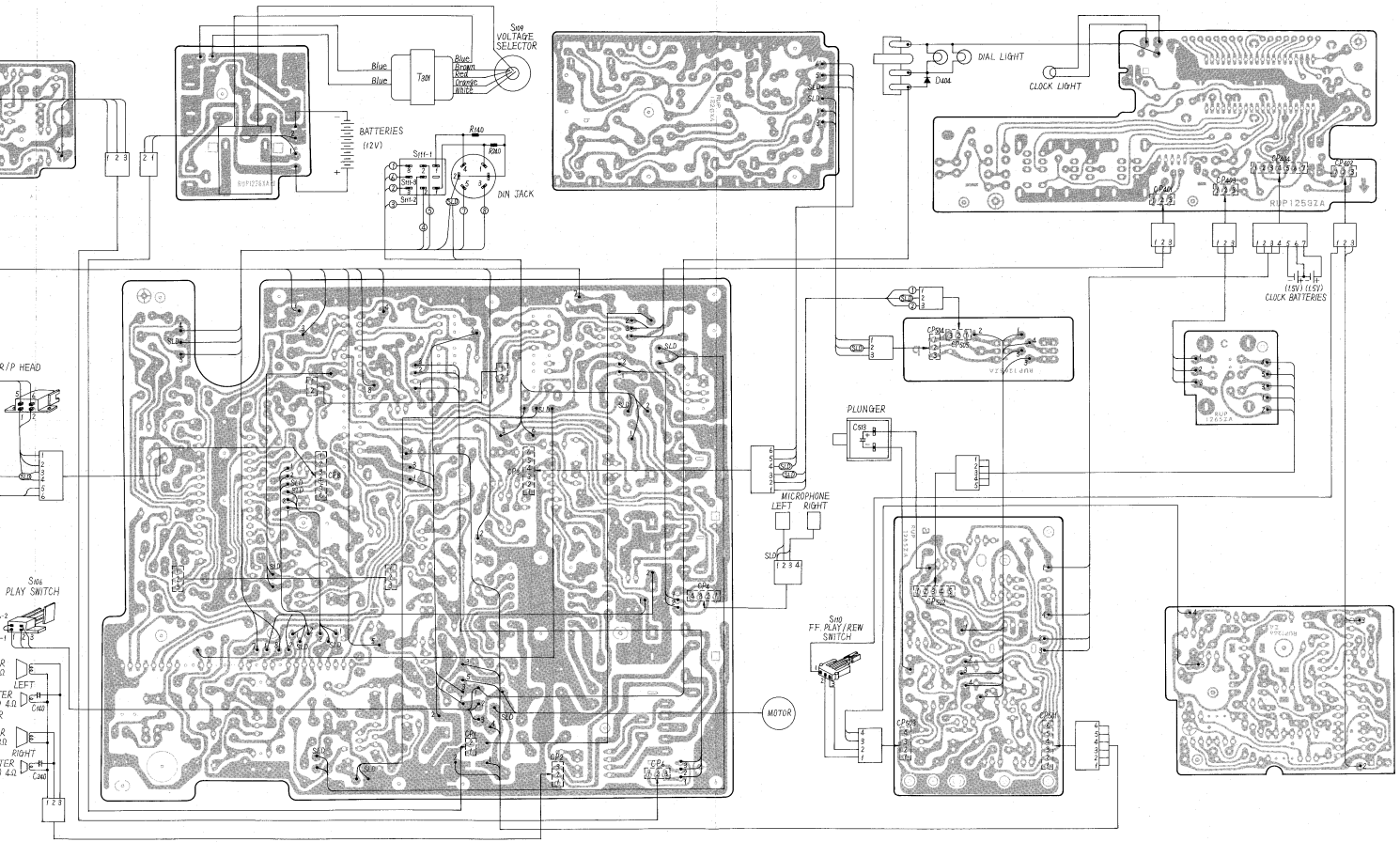
17. ⚠ indicates that only parts specified by the manufacture be used for safety.

RX-5220LS RX-5220LS

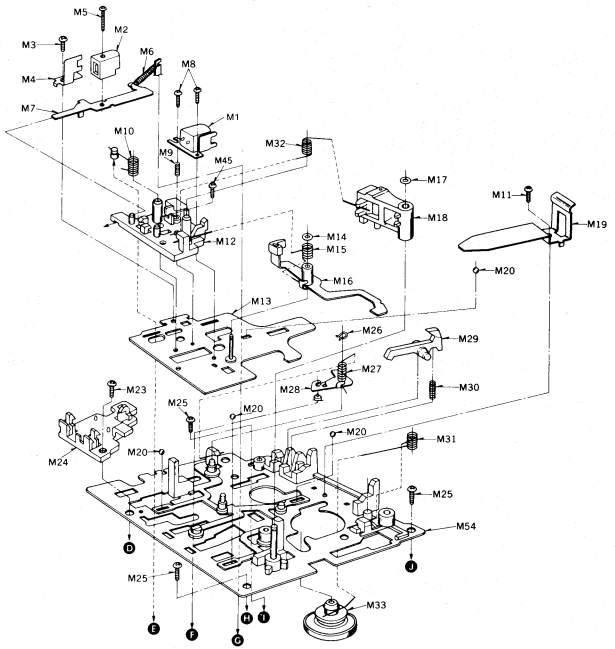
WIRING CONNECTION DIAGRAM MODEL RX-5220LS



WIRING CONNECTION DIAGRAM MODEL RX-5220LS



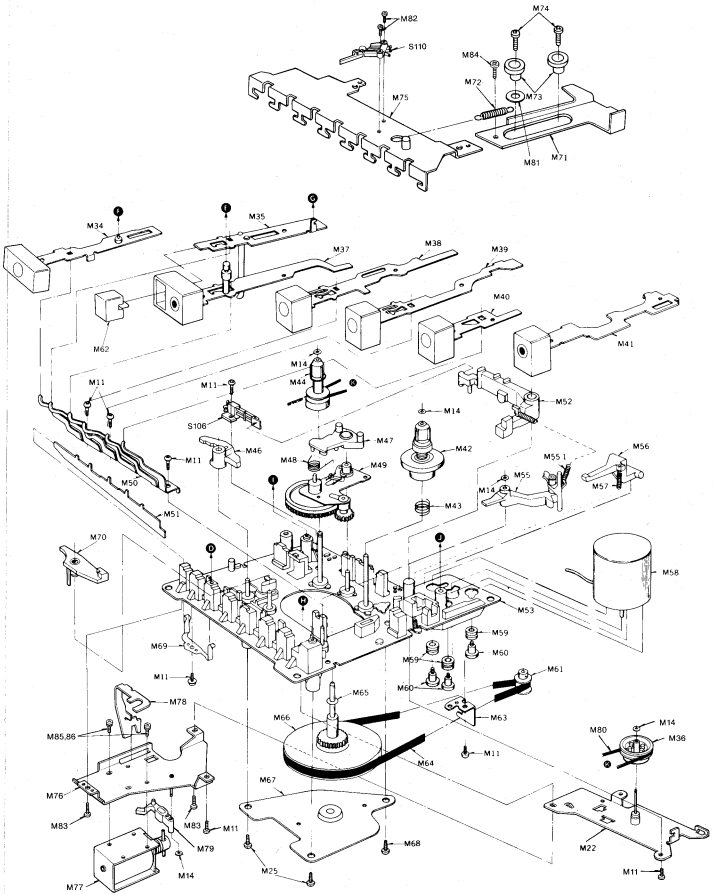
EXPLODED VIEWS



[Fig. 15]

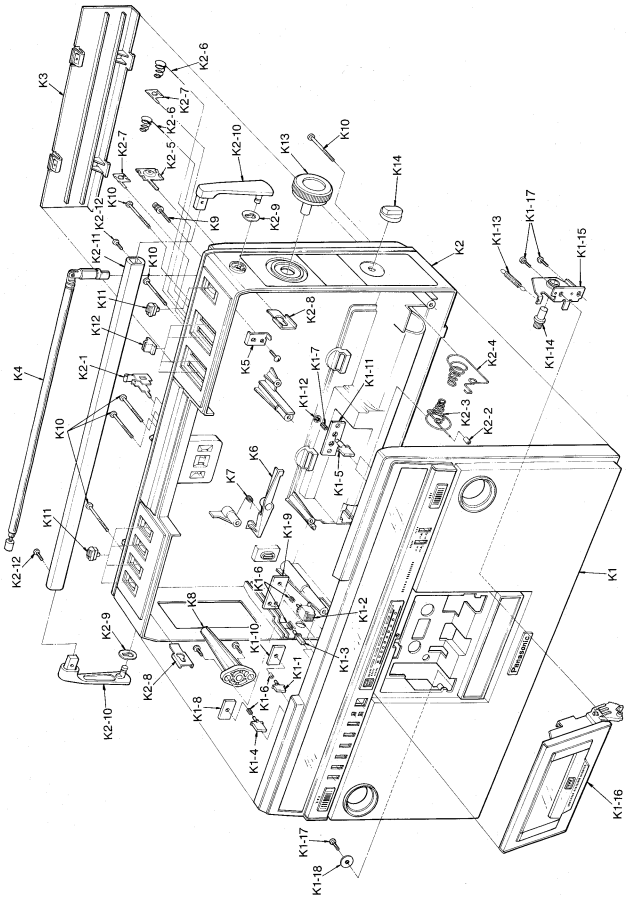
Specification

Pressure of pressure roller	400± 60gr
Takeup tension	50± 20gr
Tension of detect piece	65± 10gr
Wow & flutter	Less than 0.35% (RMS)
Tape speed fluctuation	±3%



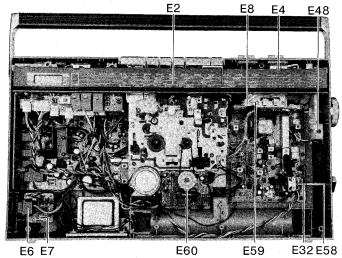
[Fig. 16]

CABINET PARTS LOCATION

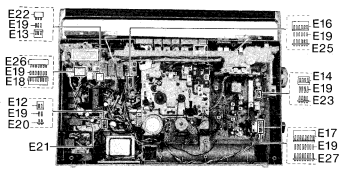


[Fig. 17]

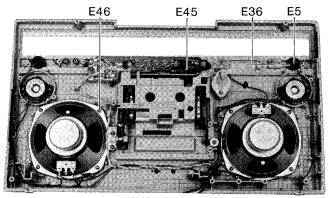
ELECTRICAL PARTS LOCATION



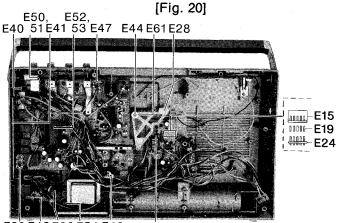
[Fig. 18]



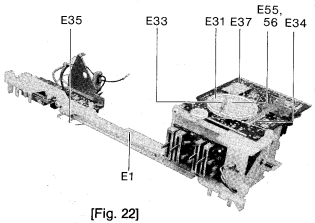
[Fig. 19]



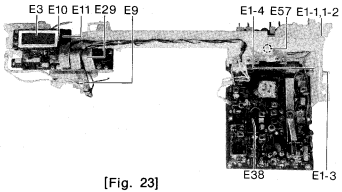
[Fig. 20]



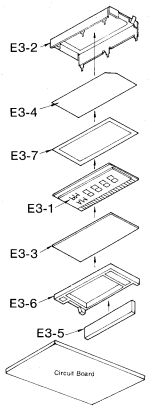
[Fig. 21]



[Fig. 22]



[Fig. 23]



[Fig. 24]

■REPLACEMENT PARTS LIST ..... Model RX-5220LS

(RD8003-1751C)

NOTES: 1. ⚠ Indicates that only parts specified by the manufacturer be used for safety.
2. The 'S' mark is service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Par Set	Remarks
		MECHANICAL PARTS		
M1	QWY4113Z	Head, Record/Playback	1	
M2	QWY2129	Head, Erase	1	
M3	XSN26+3	Screw, + 2.6x3	1	S
M4	QMG0009	Tape Guide	1	
M5	XSN26+12	Screw, + 2.6x12	1	S
M6	QBT1813	Spring, Erase Head Rod	1	
M7	QMR1474	Rod, Erase Head	1	
M8	XSN2+8	Screw, + 2x8	2	S
M9	QBC1278	Spring, Head Ajustment	1	
M10	QBN1481	Spring, Playback	1	
M11	XTN26+6B	Screw, + 2.6x6	10	S
M12	QMZ1166	Spacer, Head	1	
M13	QXK1681	Head Base Plate Ass'y	1	
M14	QBW2008	Washer	6	
M15	QBN1478	Spring, Auto-Stop Detector	1	
M16	QXL0982	Auto-Stop Detector Ass'y	1	
M17	QBW2046	Washer	1	
M18	QXL0979	Pressure Roller Ass'y	1	
M19	QBP1659	Head Base Pressure Plate	1	
M20	QDK1017	Steel Ball	4	
M21	XSN26+6	Screw, + 2.6x6	1	S
M22	RZE1X5220LSX	Pulley Shaft Assembly, Counter	1	
M23	XTN3+12B	Screw, + 3x12	1	S
M24	QMZ1167	Counter Table	1	
M25	XTN3+10B	Screw, + 3x10	5	S
M26	XUB47	Circlip	1	S
M27	QBN1480	Spring, Pause Lock	1	
M28	QML2898	Pause Lock Plate	1	
M29	QML2900	Lever, Erase Safety	1	
M30	QBC1193	Spring, Erase Safety Lever	1	
M31	QBN1479	Spring, Idler	1	
M32	QBN1488	Spring, Pressure Roller	1	
M33	QXI0088	Idler Ass'y	1	
M34	QXR0535	Pause Rod Ass'y	1	
M35	QXR0536	Record Rod Ass'y	1	
M36	RZEX5220LSXG	Counter Pulley Ass'y	1	
M37	QXR0531	Playback Rod Ass'y	1	
M38	QXR0533	Rewind Rod Ass'y	1	
M39	QXR0532	Fast Forward Rod Ass'y	1	
M40	QXR0530	Stop Rod Ass'y	1	
M41	QXR0534	Eject Rod Ass'y	1	
M42	QXD0054	Takeup Reel Table Ass'y	1	
M43	QBC1279	Spring, Back Tension	1	
M44	QDR1118	Supply Reel Table	1	
M45	QML2904	Pause Lever	1	
M47	QML3440	Fast Forward Operation Lever	1	
M48	QBN1477	Spring, Fast Forward Arm	1	
M49	QXG1023	Fast Forward Gear Arm Ass'y	1	
M50	QBP1664	Spring, Operation Rod	1	
M51	QMR1638	Lock Rod	1	
M52	QML2905	Switch Arm	1	
M53	QXK1667	Lower Base Plate Ass'y	1	
M54	QXK1668	Upper Base Plate Ass'y	1	
M55	QXL0980	Auto-Stop Drive Lever Ass'y	1	
M55-1	QBT1489	Spring, Auto-Stop Drive Lever	1	
M56	QML3496	Eject Arm	1	
M57	QBT1773	Spring, Eject Arm	1	
M58	MHT5ST2CX	Motor	1	
M59	QBG1539	Motor Cushion	3	
M60	QBG1223	Screw, Motor M'tg	3	
M61	QXP0513	Motor Pulley	1	
M62	QGG1564	Record Button	1	
M63	QMA2676	Belt Guide	1	
M64	QDB0219	Motor Belt	1	
M65	QBW2049	Washer	1	
M66	QXF0113	Flywheel	1	
M67	QXH0218	Flywheel Retainer	1	
M68	XTV3+15FS	Screw, + 3x16	1	
M69	QBP1778	Spring, Lock Rod	1	
M70	QML2945	Cue Lever	1	
M71	RUB205Z	Lever, Eject Rod	1	
M72	RDS3120A	Spring, Eject Rod	1	
M73	RHM32A	Spacer, Screw	2	
M74	XTN3+6B	Screw, + 3x6	2	S
M75	QXE0069	Operation Rod Guide	1	
M76	RZE2X5220LSX	Plunger Bracket Assembly	1	
M77	RSE68Z	Plunger	1	
M78	RUE39Z	Pause Cancel	1	
M79	RHR1103Z	Plunger Lever	1	
M80	QDB0142	Belt, Counter Pulley	1	
M81	RNW329Z	Washer, Spacer	1	
M82	XTN2+10B	Screw, Leaf Switch M'tg	2	S
M83	XTN26+8B	" , Plunger Bracket M'tg	2	S
M84	XYN26+C10	" , Stopper	1	
M85	XSN3+6S	" , Plunger M'tg	2	S
M86	XWA3B	Washer	2	S
		INTEGRATED CIRCUITS, TRANSISTORS AND DIODES		
IC1	AN7213	IC	1	
IC2	RV1UPC1018CE	IC	1	
IC3	RV1BA1330	IC	1	
IC301	AN6210	IC	1	
IC302	AN7146	IC	1	
IC303	LB1405	IC	1	
IC401	RV1TP0400N2L	IC	1	
IC601 ∿603	RV1DM74LS02N	IC	3	
IC604	RV1DM74LS123	IC	1	
IC605, 606	DN6838A	IC	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
Q1,2	2SC829	Transistor (Si)	2	
Q101,201,603	2SC945	" (Si)	3	
Q301~303	2SC2001	" (Si)	3	
Q501,502,504,505,507,508,512,601,602,605	2SC828	" (Si)	10	
Q503	2SA748	" (Ge)	1	
Q506,510,604,606	2SA564	" (Ge)	4	
Q509	2SC1383	" (Si)	1	
Q511	2SC1226	" (Si)	1	
D1	RVDK8167	Diode (Si)	1	S
D2,101,201,501,502,504,401,402,602	MA161	" (Si)	9	S
D3,4	20A90	" (Ge)	2	S
D5~8	OA90	" (Ge)	4	S
D301	RVDKB262D	" (Si)	1	S
D302,308	SM112	" (Si)	2	S
D303	RVDRD7R5FB	" (Si)	1	S
D304~307,404,503	SM112	" (Si)	6	S ⚠
D310~319	LN230RA	LED (Ga)	10	
D321	MA1110TA	Diode (Si)	1	
D403	LN217RP	LED (Ga)	1	
D601	RVDEQA0106RF	Diode (Si)	1	S
		THERMISTOR		
TH301	RRT202	Temperature Compensator	1	
		CRYSTAL		
X401	RVCQ32N58Z1	Crystal	1	
		COILS AND TRANSFORMERS		
L2	RLF5W151	Antenna Coil, LW, MW	1	
L3	QLA3M8	" , SW	1	
L4	RLD4Y44	Tuning Coil, FM	1	
L5	RLO4Y43	Oscillator Coil, FM	1	
L7	RLO1M4	" , LW	1	
L8	RLO2M14	" , MW	1	
L9	RLO3M31	" , SW	1	
L10	RLM184	Trap Coil	1	
L11,12	QLM1M2	" , 19kHz	2	
L101,201	QLQM1531	Bias Trap Coil	2	
L301	QLB0174	Bias Oscillator Coil	1	
T1	RLI4M101	IFT, FM 1st	1	S
T2	RLI4M511	" , FM 2nd	1	
T3	QLI2M102	" , AM 1st	1	
T4	RLI2M402	" , AM 2nd	1	S
T301	RLT5L97	Power Transformer	1	⚠
		VARIABLE RESISTORS		
VR1	EVLS3AA00B14	Preset, 10kΩ (B), PLL Adjustment	1	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
VR101, 201	RVNAA15B1	Preset, 100kΩ (B), Recording Bias	2	
VR103, 203	RVV54A103	Variable Resistors, Volume	2	
VR104,105,204,205	RVV54A104	Variable Resistors, Bass & Treble	2	
VR202	RVNAA24B1	Preset, 20kΩ (B), Output Level	1	
VR301	RVNAA14B1	Preset, 10kΩ (B), LED Adjustment	1	
		VARIABLE CAPACITORS		
VC1~4	RCV4KC2V2K	Tuning Capacitor	1	
CT4	RCV1PX20AGS	Trimmer Capacitor	1	
CT5,7,8	RCV1PX10AGS	"	3	
CT401	ECV1ZW40X53N	"	1	
		CERAMIC FILTERS		
CF1,2	QVF107MA5W	Ceramic Filter	2	
CF3	QCR2Z455A7W	"	1	
		COMPONENT COMBINATIONS		
Z1	RXABPMB3	Component Combination	1	
Z2	EXA5DL01CF	"	1	
		SPEAKERS		
	EAS12P126SM	Speaker, 12cm (5"), 3Ω Woofer	2	
	RAS3PH02Z	Speaker, 3cm (17/32"), 4Ω Tweeter	2	
		SWITCHES		
S7~10	RSR4J02Z	Switch, Band	1	
S101-1~S101-9 S102-1~S102-6	RSH2J01Z	" , Recording/Playback	1	
	RST2H01Z	" , Function	1	
S103	RST3B13Z	" , Meter	1	
S104-1~S104-3	RST3D09Z	" , Tape	1	
S105	RSS3A06Z	" , Beat Proof	1	
S106-1, S106-2	QSB0186	" , Play	1	
S107	RST2B18Z	" , FM Mode	1	
S108	(Built in J)	" , AC/DC Selector		
S109	RSR4A01W	" , Voltage Selector	1	⚠
S110	RSH2A04Z	" , FF Play/Rewind	1	
S111-1~S111-3	(Built in J)	" , Din		
S112, S113	RSHX024Z	" , Chirp/Memory	1	
S401-1~S401-3	RST2C01Z	" , Timer	1	
S402, S407	RSS2B23Z	" , Sleep, Auto/Function	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
S403	RSH2B17Z	Switch, Light, Time Set	1	
S404,405	408,409			
	EVQQ4R13K	" , Hour/Minute/Doze/ Counter Reset	4	
		JACKS		
J1,2	RJJ1D2Z	Jack, EXT. Mic	2	
J3,4	RJJ87Y	" , EXT. SP	2	
J5	RJJ1E2Z	" , Headphone	1	
J6,7	QJS0329	" , AC/DC IN	1	⚠
J8	RJS178Z	" , DIN	1	
		RESISTORS (Value is in OHMS)		
R333	ERC14GK106	10 M 1/4W Solid	1	S
R314	ERG1ANJP680	68 1W Metal Oxide	1	
R341	ERG1ANJP101	100 " "	1	
R316	ERG1ANJP681	680 " "	1	
R326	ERK1ANJ4R7	4.7 " "	1	S
R327	ERX1ANJ6R8	6.8 " "	1	S
R509	ERG2ANJP331	330 2W "	1	
R8,401,601,603	ERD25TJ224	220 K Carbon	4	S
R21,47,207,507,508,511,514,515,606,607,619	ERD25TJ472	4.7 K 1/4W "	11	S
R2,9,20,23,32,34,36,223,502,517,610,612,616,618,620	ERD25TJ103	10 K " "	15	S
R39,317,602,604	ERD25TJ153	15 K " "	4	S
R614,617	ERD25TJ223	22 K " "	2	S
R609,611,615	ERD25TJ333	33 K " "	3	S
R16,233,613	ERD25TJ473	47 K " "	3	S
R6,13,15,29,31,38,58,59,60	ERD25TJ470	47 " "	9	S
R14	ERD25TJ680	68 " "	1	S
R5,12,135,235,304	ERD25TJ221	220 " "	5	S
R3,35,56,301,335	ERD25TJ331	330 " "	5	S
R19,44,52	ERD25TJ391	390 " "	3	S
R4,11	ERD25TJ471	470 " "	2	S
R24	ERD25TJ681	680 " "	1	S
R22,25,28,37,55,303,320,330,506,608	ERD25TJ102	1 K " "	10	S
R7,512,513	ERD25TJ273	27 K " "	3	S
R42,43,122,501,504,519	ERD25TJ332	3.3 K " "	6	S
R45	ERD25TJ683	68 K " "	1	S
R1,318,319	ERD25TJ104	100 K " "	3	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R10,26,27,505,520	ERD25TJ474	470 K 1/4W Carbon	5	S
R33,302	ERD25TJ101	100 " "	2	S
R46	ERD25TJ820	82 " "	1	S
R57,518	ERD25TJ152	1.5 K " "	2	S
R139	ERD25TJ682	6.8 K " "	1	S
R101,103,201,203	ERD25TJ100	10 " "	4	S
R328,331	ERD25TJ220	22 " "	2	S
R124,340,510,516	ERD25TJ222	2.2 K " "	4	S
R140,240	ERD25TJ272	2.7 K " "	2	S
R343	ERD25TJ822	8.2 K " "	1	S
R503	ERD25TJ684	680 K " "	1	S
R336,337	ERX1ANJR47	0.47 1W Metal Oxide	2	
		CAPACITORS (Value is in MICRO FARADS except P.F=PICO FARADS)		
C7	ECCD1H470KC	47 P 50V Ceramic	1	
C22	ECCD1H070DC	7 P " "	1	
C1,21	ECCD1H100KC	10 P " "	2	
C2,14,80	ECCD1H150KC	15 P " "	3	
C15	ECCD1H180KC	18 P " "	1	
C63	ECCD1H120KC	12 P " "	1	
C5	ECCD1H200JC	20 P " "	1	
C28,111,211,324	ECCD1H181K	180 P " "	4	
C74	ECCD1H121K	120 P " "	1	
C16	ECCD1H040C	4 P " "	1	
C10	ECCD1H050CC	5 P " "	1	
C36	ECCD1H270KC	27 P " "	1	
C35,401	ECCD1H330KC	33 P " "	2	
C30	ECCD1H560KC	56 P " "	1	
C39	ECCD1H181KD	180 P " "	1	
C19,46,319,322	ECKD1H103ZF	0.01 " "	6	
C9,20,27,31,43,66,403,409	ECKD1H223ZF	0.022 " "	13	
C4,6,75,118,145,218,245	ECKD1H102MD	0.001 " "	7	
C11,12,13,18,38,40,70,112,212	ECKD1H103JMD	0.01 " "	9	
C146,246,333	ECKD1H332MD	0.0033 " "	3	
C129,229,240	ECCD1H101K	100 P " "	3	
C135,235	ECCD1H330K	33 P " "	2	
C143	ECCD1H331K	330 P " "	1	
C332	ECCD1H331KD	330 P " "	1	
C128,228	ECKD1H681KB	680 P " "	2	
C136,236	ECKD1H472MD	0.0047 " "	2	
C101,201	ECKD1H152MD	0.0015 " "	2	
C116,119,137,139,216,219,237,503	ECKD1H222MD	0.0022 " "	8	

21

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C134,233,234,325	ECKD1H102ZF	0.001 50V Ceramic	4	
C141,239,241	ECKD1H222MD	0.0022 " "	3	
C505	ECKD1H152MD	0.0015 " "	1	
C502	ECCD1H030C	3 P " "	1	
C511	ECKD1H682MD	0.0068 " "	1	
C402	ECSF0JE106	10 6.3V Electrolytic	1	
C26	ECMS05151J	150 P 50V Mica	1	
C23	ECMS05221J	220 P " "	1	
C24	ECQS1361JW	360 P 125V Styrol	1	
C55,117,217	ECQS1681JW	680 P " "	3	
C25	ECQS1H392KZ	3900 P 50V "	1	
C314	ECQS1H152JZ	1500 P " "	1	
C315	ECQS1H472KZ	4700 P " "	1	
C340	ECQS1H272KZ	2700 P " "	1	
C131,231	ECQG05224MZ	0.22 50V Polyester	2	
C312,601,604	ECFVD333MD	0.033 25V Semi-Conductor	3	
C33	ECFVD103MD	0.01 " "	1	
C34,50,56,57,61,104, 121,204,221	ECFVD223MD	0.022 " "	9	
C42,53,62,124,224, 330,501,514	ECFVD473MD	0.047 " "	8	
C45	ECFVD104MD	0.1 " "	1	
C123,223	ECFVD562KA	0.0056 " "	2	
C510,512	ECFVD683MD	0.068 " "	2	
C317,318,513,609	ECEA1CS471	470 16V Electrolytic	4	S
C29,47,54,313,603	ECEA1AS221	220 10V "	5	S
C309,323,410,507,508,607,608	ECEA1HS100	10 50V "	7	S
C103,203,305,306,602	ECEA1AS101	100 10V "	5	S
C606	ECEA50Z2R2	2.2 50V "	1	S
C17,52,108,115,208,215	ECEA50ZR47	0.47 " "	6	S
C32,113,127,130,213,227, 230,307,308,310,316	ECEA1AS470	47 10V "	11	S
C41,140,240,506	ECEA2S4R7	4.7 25V "	4	S
C44,48,49,58,59,102,105,107,110,114, 126,202,205,207,210,214,226,504	ECEA50Z1	1 50V "	18	S
C37,326	ECEA1CS330	33 16V "	2	S
C51,109,120,122,209,220,222	ECEA50ZR22	0.22 50V "	7	S
C106,206	ECEA50Z3R3	3.3 " "	2	S
C138,238	ECEA50ZR1	0.1 " "	2	S
C132,232	ECEA1AS471	470 10V "	2	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C303	ECEA1ES101	100 25V Electrolytic	1	S
C301,304,509	ECEA1CS221	220 16V "	3	S
C302	ECEA1CS222	2200 " "	1	S
C331	ECSF16E10	10 " "	1	S
C311	ECSF10E10	10 10V "	1	S
C341,322	ECEA1ES471	470 25V "	2	S
		CABINET PARTS		
K1	RYMX5220LS92	Front Cabinet Assembly	1	
K1-1	RBC246Z	Button, Light/Time Set	1	
K1-2	RBC247Z	" , Doze/Sleep Cancel	1	
K1-3	RBC248Z	" , Hour/Minute	2	
K1-4	RBC249Z	" , Counter Reset	1	
K1-5	RBC250Z	" , Memory/Chirp	2	
K1-6	RDS3052Z	Spring, Button	5	
K1-7	RDS5083Z	" , Button	2	
K1-8	RHR1106Z	Plastic Board, Button	1	
K1-9	RHR1107Z	" , Button	1	
K1-10	RHR1124Z	" , Button	1	
K1-11	RHR1125Z	" , Button	1	
K1-12	RHE6010A	Stopper, Button	2	
K1-13	RDS5133Z	Spring, Slow Up	1	
K1-14	RDG5690Z	Gear, Slow Up	1	
K1-15	RZEX5100N	Bracket Assembly, Cassette Slot	1	
K1-16	RYQX5100TX	Cassette Slot Assembly	1	
K1-17	XTV3+10G	Screw	3	
K1-18	XWG3F13	Washer	2	S
K2	RYFX5220LSX7	Rear Cabinet Assembly	1	
K2-1	RJF1065Z	Terminal, EXT. Ant.	2	
K2-2	RJT398A	Connecting Pipe	1	
K2-3	RJC505Z	Spring, Battery - Side	1	
K2-4	RJC931Z	Terminal, Battery +, - Side	1	
K2-5	QJB0116	Terminal, Battery + Side	1	
K2-6	RJC742Z	Spring, Display Battery - Side	2	
K2-7	RJC363Z	Terminal, Display Battery + Side	2	
K2-8	QBP1817	Bracket, Arm	2	
K2-9	RKX184Z	Spacer, Arm	2	
K2-10	RKX178Z	Arm, Handle	2	
K2-11	RKX179Z	Handle	1	
K2-12	XTB3+8BFN	Screw, Handle M'tg	2	
K3	RYNX5200M7	Battery Cover Assembly	1	
K4	XEARR345CAY	Telescopic Antenna	1	
K5	RJT651Z	Terminal, Telescopic Ant.	1	
K6	RUB2002I	Eject Lever	1	
K7	RUS124B	Spring Eject Lever	1	
K8	RKE316Z	Stay Shaft	1	
K9	XYN3+F15PZ	Screw, Telescopic Ant M'tg	1	
K10	XTN35+50G	" , Cabinet M'tg	6	
K11	RBD94Y	Knob, FM Mode etc.	5	
K12	RBD113Z	" , Volume, Tone	4	
K13	RBN516Z	" , Tuning	1	
K14	RBS153Z	" , Band	1	

22

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		ELECTRICAL PARTS		
E1	RZAX5220LSXG	Dial Chassis Assembly	1	
E1-1	RDR20-3	Pulley, Dial	2	
E1-2	RDY43Z	Shaft, Pulley	2	
E1-3	RDT5151Z	" , Tuning	1	
E1-4	XUC5FT	Circlip, Tuning Shaft	1	S
E2	RYDX5220LSXG	Dial Scale Assembly	1	
E3	RWPX5220LSXG	Quatz Assembly	1	
E3-1	RADLDBU145D	LCD	1	
E3-2	RMC660Z	Shield Cover	1	
E3-3	RDH164Z	Reflection Plate	1	
E3-4	RGP617Z	Polarization Plate	1	
E3-5	RHG5007Z	Zebra Connector	1	
E3-6	RHR1108Z	Spacer	1	
E3-7	RHR2006Z	"	1	
E4	XAMR48T150	Pilot Lamp, Dial 12V, 40mA	2	S
E5	RJM142Z	Microphone	2	
E6	QTW1135	Cover, AC IN Jack	1	⚠
E7	XBA2C20TRO	Fuse, 250V , T2A	1	⚠
E8	RJR207	Terminal Strip	1	
E9	RJR22Z	"	1	
E10	XAMR18T20	Pilot Lamp, Clock, 6.3V, 70mA	1	
E11	RMP134Z	LED Holder	1	
E12	RJS171Z	Socket, 2 Pin	1	
E13	RJS253Y	" , 3 Pin	8	
E14	RJS216Y	" , 4 Pin	3	
E15	RJS217Y	" , 5 Pin	1	
E16	RJS112Y	" , 6 Pin	3	
E17	RJS264Y	" , 8 Pin	1	
E18	RJS219Y	" , 7 Pin	1	
E19	RJT462Z	Terminal	57	
E20	RJP213Z	Plug, 2 Pin, CP1	1	
E21	RJP137Z	" , 3 Pin, CP2,6,505	4	
E22	RJP133Z	" , 3 Pin, CP401,402,403,504	4	
E23	RJP107Z	" , 4 Pin, CP4,503	3	
E24	RJP116Z	" , 5 Pin, CP502	1	
E25	RJP142Z	" , 6 Pin, CP3,8,501	3	
E26	RJP135Z	" , 7 Pin, CP404	1	
E27	RJP171Z	" , 8 Pin	1	
E28	RUB201Z	R/P Lever	1	
E29	RUV589Z	Cover, Function, Clock Switch etc.	3	
E30	RUV387Z	Cover, Voltage Selector	1	⚠
E31	RDD567Z	Drum, Dial	1	
E32	RDF831Z	Shaft, Band Switch	1	
E33	RDS4170A	Spring, Dial	1	
E34	RDZ05Z	Cord, Dial	1 ROLL	S
E35	RDP805Z	Pointer, Dial	1	
E36	RHG416Z	Cover, Microphone	2	
E37	RMC228A	Shield Cover	1	
E38	RMC171Y	" , IC2	1	
E39	RHM108Z	Nut, Headphone	1	
E40	RMK125Z	Bracket, Din Jack	1	
E41	RKE317X	Jack Board	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
E42	QJC0018	Terminal, Earth	1	
E43	QTF1054	Fuse Holder	2	⚠
E44	XTB3+35C	Screw, R/P Lever M'tg	1	
E45	XTV3+8G	" , PC Board M'tg	4	
E46	XTV3+10G	" , PC Board etc. M'tg	29	
E47	XTV3+12GR	Red Screw, PC Board M'tg	21	
E48	XTW3+12GR	" , Dial Chassis M'tg	1	
E49	XSN3+6S	Screw, Heat Sink etc. M'tg	3	S
E50	XSN3+8S	" , Switch M'tg	2	S
E51	XWA3B	Washer	3	S
E52	XSN3+12S	Screw, Heat Sink M'tg	2	S
E53	XWG3	Washer	2	S
E54	XYN4+F6	Screw, Transformer M'tg	2	
E55	XSN26+8	" , Drum M'tg	1	S
E56	XWA26B	Washer	1	S
E57	XTN3+8B	Screw, Switch Bracket M'tg	2	S
E58	XUC5FT	Circlip	1	S
E59	XTN3+6B	Screw, Terminal Strip & Switch M'tg	4	S
E60	RHR1104Z	Cover, IC605,606	2	
E61	XWG3F13	Washer, R/P Lever	1	S
		ACCESSORIES		
	RJA20Z	Power Cord, AC	1	S ⚠
	RJN23Z	Cassette Tape	1	
		PACKING MATERIALS		
	XZB60X60A04	Polyethylene Cover	1	S
	RPN9334Z	Pad Complete	1	
	RPK885Z	Gift Box	1	
		PRINTED MATERIAL		
	RQX6529Z	Instruction Book	1	

RX-5220LS FRANCAIS

■ SPECIFICATIONS

Généralités:	c.a. 100 à 110/115 à 127/200 à 220/230 à 250 V 50/60 Hz	Sortie:	EXT SP; 3 à 8Ω HEADPHONE; 8Ω
	Consommation; 27W	Branchement REC/PB:	fiche DIN à 5 broches
	Piles; 12V (huit piles sèches UM-1, dimension D)		IN; sensibilité 0.32mV (70±30kΩ) OUT; sortie 0.36V (70±30kΩ)
	batterie pour auto/bateau; avec adaptateur (RP-952) auto/bateau en option	Haut-parleur:	Haut-parleur des graves; 12cm haut-parleur dynamique à aimant permanent (3Ω)
Puissance de sortie:	12W (6W×2) . . . (DC max.)		Haut-parleur des aigus; 3 cm haut-parleur dynamique à aimant permanent (4Ω)
Gamme de fréquence:	70 à 11,000 Hz (avec bande normale)		
	70 à 13,000 Hz (avec bande CrO_2)		
	70 à 13,000 Hz (avec bande FeCr)	Fréquence radio:	FM; 87.5 à 108 MHz
Système d'enregistrement:	plarisation c.a., effacement magnétique		GO; 145 à 285 kHz (2060 à 1060 m)
Vitesse de bande:	4,8 cm/sec.		PO; 520 à 1610 kHz (577 à 186 m)
Pleurage et scintillement:	0,35% (RMS)		OC; 5.9 à 18 MHz (50.8 à 16.7 m)
Durée de lecture:	1 heure avec cassette C-60	Fréquence intermédiaire:	FM; 10.7 MHz
Pistes:	enregistrement et lecture stéréo 4 pistes, 2 canaux		AM; 455 kHz
Entrée:	MIC; sensibilité 0.32 mV; impédance applicable pour microphone 200~600Ω (microphone recommandé RP-8135)	Sensibilité:	FM; 5μV pour une sortie de 50mW
			GO; 160μV/m pour une sortie de 50mW
			PO; 75μV/m pour une sortie de 50mW
			OC; 6μV pour une sortie de 50mW
	DC IN; 13,2V	Dimensions (l×h×Pr) mm:	467×267×150 mm (18⅜"×10½"×5⅞")
		Poids kg:	5.4 sans piles

Les spécifications sont sujettes à des changements sans préavis.

ALIGNEMENTS

■ REGLAGE

AVANT DE PROCEDER AUX ALIGNEMENTS LIRE ATTENTIVEMENT CE QUI SUIT

1. Le potentiomètre de volume au maximum.
2. Les commande de tonalite et aigus au centre.
3. Le sélecteur de bande sur MW (PO), LW (GO), SW (OC), ou FM.
4. Le sélecteur bande/radio sur "radio".
5. Régler la tension sur 12 V c.c.
6. Régler la sortie du générateur étalonné de façon à ne pas surcharger les circuits.

ALIGNEMENT GO, PO et OC

	BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE		POSITION DE L'AIGUILLE SUR LE CADARAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE ELECTRO-NIQUES)	REGLAGE	OBSERVATIONS
		BRANCHEMENTS	FREQUENCE				
		ALIGNEMENT FI sur AM					
(1)	PO	Via une bobine de fil couplée à l'antenne.	455 kHz (modulation de 30% à 400 Hz)	Point de non-interférence	Voltmètre branché à la bobine oscillatrice	T3 (AM 1er IFT) T4 (AM 2e IFT)	Régler pour une sortie maximum.
		ALIGNEMENT HF sur GO					
(2)	GO	"	145 kHz	145 kHz [11,2 mm ($^{15}/_{32}$")]	Voltmètre branché à la bobine oscillatrice	L7 (bobine d'oscillateur GO) (*1) L2 (bobine d'antenne GO)	Régler pour une sortie maximum en glissant la bobine L2 le long du noyau en ferrite.
(3)	GO	"	285 kHz	285 kHz [166 mm ($6^{17}/_{32}$")]	"	CT6 (trimmer d'oscillateur GO) CT4 (trimmer d'antenne GO)	Régler pour une sortie maximum. Refaire les étapes (2) et (3).
	(*1) Sceller la bobine d'antenne à la cire après avoir achevé l'alignement.						
	ALIGNEMENT HF sur PO						
	BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE		POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE ELECTRO-NIQUES)	REGLAGE	OBSERVATIONS
		BRANCHEMENTS	FREQUENCE				
(4)	PO	"	550 kHz	550 kHz [12,9 mm ($^{1}/_{2}$")]	Voltmètre branché à la bobine oscillatrice	L8 (bobine d'oscillateur PO) (*2) L2 (bobine d'antenne PO)	Régler pour une sortie maximum en glissant la bobine L2 le long du noyau en ferrite.
(5)	PO	"	1500 kHz	1500 kHz [171,1 mm ($6^{23}/_{32}$")]	"	CT7 (trimmer d'oscillateur PO) CT3 (trimmer d'antenne PO)	Régler pour une sortie maximum. Refaire les étapes (4) et (5).
	(*2) Sceller la bobine d'antenne à la cire après avoir achevé l'alignement.						
	ALIGNEMENT HF sur OC						
(6)	OC	"	6 MHz	6 MHz [8 mm ($^{5}/_{16}$")]	Voltmètre branché à la bobine oscillatrice	L9 (bobine d'oscillateur OC) L3 (bobine d'antenne OC)	Régler pour une sortie maximum.
(7)	OC	"	18 MHz	18 MHz [188 mm ($7^{13}/_{32}$")]	"	CT8 (trimmer d'oscillateur OC) CT5 (trimmer d'antenne OC)	Régler pour une sortie maximum. Refaire les étapes (6) et (7).

■ ALIGNEMENT FM

	BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE		POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE)	REGLAGE	OBSERVATIONS
		BRANCHEMENTS	FREQUENCE				
		ALIGNEMENT HF sur FM					
(1)	FM	Brancher au ▼ via 0,001μF. Côte négatif à la terre.	10,7 MHz	Point de non-interférence	Brancher la sonde vert. de l'oscilloscope au ▼. Côté négatif à la au ▼	T1 (FM IFT) (Primaire)	Régler pour une amplitude maximum. (Voir fig. 12.)
(2)	FM	"	"	"	"	T2 (FM IFT) (Secondaire)	Régler pour une amplitude maximum (Voir fig. 13.)
		ALIGNEMENT HF sur FM					
(3)	FM	Brancher au ▼ via une antenne fictive FM. (Voir fig. 14.)	87,5 MHz	Condensateur variable totalement fermé.	Voltmètre branché à la bobine oscillatrice	L5 (bobine d'oscillateur FM)	(*3) Régler pour une sortie maximum
(4)	FM	"	90 MHz	90 MHz [26,1 mm ($1^{1}/_{32}$")]	"	L4 (bobine TUNE FM)	(*3) Régler pour une sortie maximum
(5)	FM	"	106 MHz	106 MHz [168 mm ($6^{5}/_{8}$")]	"	CT2 (trimmer d'oscillateur FM) CT1 (trimmer TUNE FM)	(*3) Régler pour une sortie maximum Refaire les étapes (3) et (5).
	(*3) Il y aura trois réponses de sortie; la syntonisation adéquate est la fréquence du milieu.						

■ ALIGNEMENTS DES

ELEMENT	
Contrôle des piles	

■ ALIGNEMENT DE LA

ELEMENT	SIG 60c MI
Reglage du signal pilote.	

■ ALIGNEMENTS AUDI

ELEMENT	
Courant de polarisation	
Fréquence d'oscillation de polarisation	
Niveau de lecture	(3

SYMBOLES

1. S7-1 à S7-10 .....Sélect (1...Fl
2. S101-1 à S101-9...Comm tion "I (1...le
3. S102-1 à S102-6...Comm (1...Ba
4. S103 .....Comm "Arrêt (1...Au
5. S104-1 à S104-3...Sélect (1...N
6. S105 .....Comm Positi (1...I
7. S106-1 à S106-2...Comm tion "a
8. S107 .....Comm Stéréc (1...St
9. S108 .....Sélect
10. S109 .....Sélect
11. S110 .....Avanc rebob
12. S111-1 à S111-3...Séle (1...
13. S112-1, S112-2 . Interru "chirp
14. S113 .....Comm positio
15. S401-1~S401-3. Comm autom

(3)	GO	"	285 kHz	285 kHz [166 mm ($6^{17}/_{32}$")]	"	CT6 (trimmer d'oscillateur GO) CT4 (trimmer d'antenne GO)	Régler pour une sortie maximum. Refaire les étapes (2) et (3).

(*1) Sceller la bobine d'antenne à la cire après avoir achevé l'alignement.

ALIGNEMENT HF sur PO

	BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE		POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE ELECTRONIQUES)	REGLAGE	OBSERVATIONS
		BRANCHEMENTS	FREQUENCE				
(4)	PO	"	550 kHz	550 kHz [12,9 mm ($^{1}/_{2}$")]	Voltmètre branché à la bobine oscillatrice	L8 (bobine d'oscillateur PO) (*2) L2 (bobine d'antenne PO)	Régler pour une sortie maximum en glissant la bobine L2 le long du noyau en ferrite.
(5)	PO	"	1500 kHz	1500 kHz [171,1 mm ($6^{23}/_{32}$")]	"	CT7 (trimmer d'oscillateur PO) CT3 (trimmer d'antenne PO)	Régler pour une sortie maximum. Refaire les étapes (4) et (5).

(*2) Sceller la bobine d'antenne à la cire après avoir achevé l'alignement.

ALIGNEMENT HF sur OC

(6)	OC	"	6 MHz	6 MHz [8 mm ($^{5}/_{16}$")]	Voltmètre branché à la bobine oscillatrice	L9 (bobine d'oscillateur OC) L3 (bobine d'antenne OC)	Régler pour une sortie maximum.
(7)	OC	"	18 MHz	18 MHz [188 mm ($7^{13}/_{32}$")]	"	CT8 (trimmer d'oscillateur OC) CT5 (trimmer d'antenne OC)	Régler pour une sortie maximum. Refaire les étapes (6) et (7).

■ ALIGNEMENT FM

	BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE		POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE)	REGLAGE	OBSTERVATIONS
		BRANCHEMENTS	FREQUENCE				
				ALIGNEMENT HF sur FM			
(1)	FM	Brancher au ▼ via 0,001μF. Côte négatif à la terre.	10,7 MHz	Point de non-interférence	Brancher la sonde vert. de l'oscilloscope au ▼. Côté négatif à la au ▼	T1 (FM IFT) (Primaire)	Régler pour une amplitude maximum. (Voir fig. 12.)
(2)	FM	"	"	"	"	T2 (FM IFT) (Secondaire)	Régler pour une amplitude maximum (Voir fig. 13.)
				ALIGNEMENT HF sur FM			
(3)	FM	Brancher au ▼ via une antenne fictive FM. (Voir fig. 14.)	87,5 MHz	Condensateur variable totalement fermé.	Voltmètre branché à la bobine oscillatrice	L5 (bobine d'oscillateur FM)	(*3) Régler pour une sortie maximum
(4)	FM	"	90 MHz	90 MHz [26,1 mm ($1^{1}/_{32}$")]	"	L4 (bobine TUNE FM)	(*3) Régler pour une sortie maximum
(5)	FM	"	106 MHz	106 MHz [168 mm ($6^{5}/_{8}$")]	"	CT2 (trimmer d'oscillateur FM) CT1 (trimmer TUNE FM)	(*3) Régler pour une sortie maximum Refaire les étapes (3) et (5).

(*3) Il y aura trois réponses de sortie; la syntonisation adéquate est la fréquence du milieu.

■ ALIGNEMENTS DES VU-METERS A DEL

ELEMENT	REGLAGE	REMARQUES
Contrôle des piles	VR301	1) Alimenter par un courant continu de 8,5 V au niveau du Jack DC IN. 2) Régler le VR301 de façon à ce que la 5^{e} DEL à droite de la gauche commence à s'allumer.

■ ALIGNEMENT DE LA DIAPHONIE

ELEMENT	SIGNAL 90 MHz, 60dB BRANCHEMENT SUR LA SOURCE	BRANCHEMENT A L'EQUIPMENT (COMPTEUR ELECTRONIQUE)	REGLAGE	SPECIFICATION	REMARQUES
Reglage du signal pilote.	—	▼...côté (+) ▼...coté (−)	VR1	19 kHz	Régler VR1 pour 19 kHz (±150 Hz) en effectuant la lecture sur le compteur électronique.

■ ALIGNEMENTS AUDIO

ELEMENT	ENTREE	POINT DE MESURE	SPECIFICATION	POINT DE REGLAGE	OBSERVATIONS
Courant de polarisation	—	▼ (canal gauche) ▼ (canal droit) ▼ (terre)	4.1±0.2 mV (utiliser la bande CrO_2)	VR101 (canal gauche) VR201 (canal droit)	Mode d'enregistrement anti → I
Fréquence d'oscillation de polarisation	—	▼ ▼	47.5 kHz±0.3 kHz (Utiliser al bande CrO_2)	L301	Mode d'enregistrement anti → I
Niveau de lecture	QZZCFM (315 Hz, 0dB)	Prise DIN	—	VR202 (canal droit)	Mode de lecteur stéréo

SYMBOLES UTILISES DANS LE SCHEMA

1. S7-1 à S7-10 .....Sélecteur de gamme d'onde en position "FM". (1...FM, 2...GO, 3...PO, 4...OC).
2. S101-1 à S101-9...Commutateur enregistrement/lecture en position "lecture". (1...lecture, 2...enregistrement).
3. S102-1 à S102-6...Commutateur de fonction en Position "Bande". (1...Bande, 3 . . . Radio).
4. S103 .....Commutateur de l'indicateur en position "Arrêt". (1...Arrêt, 2...Syntonisation, 3...Niveau).
5. S104-1 à S104-3...Sélecteur de bande en position "Normal". (1...Normal, 2...FeCr, 3...CrO_2).
6. S105 .....Commutateur de anti-interférences en Position "I". (1 . . . I, 2 . . . II, 3 . . . III).
7. S106-1 à S106-2...Ammutateur marche/arrêt du moteur en position "arrêt".
8. S107 .....Commutateur de mode (Montré en position Stéréo). (1...Stéréon, 3 . . . Mono.)
9. S108 .....Sélecteur c.a./c.c. en position "c.c.".
10. S109 .....Sélecteur de tension.
11. S110 .....Avance accélérée, commutateur lecture/rebobinage sur la position "rebobinage"
12. S111-1 à S111-3 . . . Sélecteur d'entrée (1 . . . DIN, 3 . . . MIC)
13. S112-1, S112-2 . Interrupteur marche/arrêt ("ON", "OFF") "chirp"
14. S113 . . . . . Commutateur rebobinage préréglé sur la position "OFF"
15. S401-1~S401-3. Commutateur marche/arrêt ("ON", "OFF") automatique sur "OFF"
16. S402-1, S402-2 . Commutateur auto/"sommeil" sur la position "AUTO"
17. S403-1, S403-2 . Commutateur de l'horloge/programmateur (light)
18. S404 . . . . . Commutateur de réglage des minutes
19. S405 . . . . . Commutateur de réglage des heures
20. S406 . . . . . Commutateur réglage de l'heure/réglage des minutes sur la position "TIME"
21. S407 . . . . . Commutateur de mode sur la position "CLOCK" (horloge) [(1) . . . horloge ("clock"), (2) . . . compte-tours ("counter")]
22. S408 . . . . . Commutateur minuterie de réveil ("doze")/annulation de "sommeil" ("sleep-cancel")
23. S409 . . . . . Commande de remise à zéro
24. Les éléments précédés du symbole Δ ne doivent être remplacés que par des pièces d'origine par mesure de sécurité.
25. La tension c.c. est mesurée au moyen d'un voltmètre électronique à partir de la borne négative de la pile. [ ]...position FM, ( )...position AM
26. Courant des piles, pas de signal.....120 mA
    sortie maximum (Radio) .....1.1 A
    (Bande) .....1.3 A
27. VR1 .....Réglage de fréquence de l'oscillateur VCO.
    VR101, 201 .....Commande de réglage du courant de polarisation.
    VR202 .....Commande de réglage du courant de lecture.
    VR103, 203 .....Potentiomètre de volume.
    VR104, 204, 105, 205 .....Commande de tonalite.
    VR301 .....Contrôle de niveau à DEL.
28. La marque (▼) signale un point de vérification.
    Ex.: ▼= point de vérification 1.

RX-5220LS DEUTSCH

■ TECHNISHE DATEN

Stromversorgung:	Wechselstrom: 100~110/115~127/ 200~220/230~250 V, 50/60 Hz Leistungsaufnahme: 27 W Batterien: 12 V (acht Trockenbatterien UM-1, Größe D) Auto- oder Bootsbatterie: über eine Auto/Bootsadapter (RP-952: als Sonderzubehör erhältlich) anschließbar	REC/PB-Anschlußbuchse:	5 polige DIN-Buchse IN: Empfindlichkeit 0.32 mV (70±30 kΩ) OUT: Ausgangspegel 0.36 V
Ausgangsleistung:	12 W (2×6 W) eff. (DC max.)	Lautsprecher:	Tieftonlautsprecher: dynamischer PM-Lautsprecher, ϕ12 cm (3Ω) Hochtonlautsprecher: dynamischer PM-Lautsprecher, ϕ3 cm (4Ω)
Frequenzbereich:	70~11,000 Hz (Normal Band) 70~13,000 Hz (CrO_2-Band) 70~13,000 Hz (FeCr-Band)	Wellenbereiche:	UKW: 87,5~108 MHz LW: 145~285 kHz (2060~1060 m) MW: 520~1610 kHz (577~186 m) KW: 5,9~18 MHz (50,8~16,7 m)
Aufnahmesystem:	Wechselstrom-Vormagnetisierung, Magnetlöschung	Zwischenfrequenz:	FM: 10,7 MHz AM: 455 kHz
Bandgeschwindigkeit:	4,8 cm/s	Empfindlichkeit:	UKW: 5 µV bei 50 mW Ausgangsleistung
Gleichlaufschwankungen:	0,35% (RMS)		LW: 160 µV/m bei 50 mW Ausgangsleistung
Spieldauer:	1 Stunde mit Cassette C-60		MW: 75 µV/m bei 50 mW Ausgangsleistung
Spurlage:	Stereoaufnahme und -wiedergabe auf 4 Spuren/2 Kanälen		KW: 6 µV bei 50 mw Ausgangsleistung
Eingangsspannungen:	MIC: Empfindlichkeit 0,32 mV, Mikrofonimpedanz 200~600Ω (empfohlenes Mikrofon; RP-8135) DC IN: 13,2 V	Abmessungen (B×H×T):	467×267×150 mm (18⅜"×10½"×5⅞")
Ausgngsimpedanzen:	EXT SP: 3~8Ω HEADPHONE: 8Ω	Gewicht (ohne Batterien):	5,4 kg (11 lb. 14 oz.)

Änderungen vorbehalten.

ABGLEICH

■ VORGANGSWEISE BEIM ABGLEICH

BITTE DIESEN ABSCHNITT VOR DEM ABGLEICH SORGFALTIG DURCHLESEN

1. Den Lautstärkeregler in die Maximalposition stellen.
2. Den Klangeregler in die Mittelposition stellen.
3. Den Wellenbereichsschalter auf MW, LW, KW oder FM stellen.
4. Den "Tape/Radio"-Wahlschalter auf "radio" stellen.
5. Eine Stromquelle von 12 V Gleichsspannung anlegen.
6. Der Signalgeneratorausgang sollte nicht größer sein, als für eine Ausgangsanzeige unbedingt notwendig ist.

■ LW-, MW- UND KW-ABGLEICH

	WELLENBAND	SIGNALGENERATOR oder WOBBELGENERATOR: ANSCHLÜSSE	SIGNALGENERATOR oder WOBBELGENERATOR: FREQUENZ	STELLUNG DES ABSTIMM-REGLERS	MESSGERÄT (ELEKTRONIK-VOLTMETER oder OSZILLOSKOP)	ABGLEICH	BEMERKUNGEN
		AM-ZF-ABGLEICH					
(1)	MW	Aus einem Draht einige Schleifen bilden und das Signal in die Empfängerschleife abstrahlen.	455 kHz, 30% mode. (Modulationsfrequenz 400 Hz)	Der Abstimmpunkt, wo keine Interferenz auftritt.	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule	T3 (1. AM-ZF-Abgleich) T4 (2. AM-ZF-Abgleich)	Die maximale Ausgangsleistung einstellen.
		LW-HF-ABGLEICH					
(2)	LW	〃	145 kHz	145 kHz [11,2 mm (19/32")]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule	L7 (LW-Oszillatorspule) (*1) L2 (LW-Antennenspule)	Die maximale Ausgangsleistung einstellen. L2 durch Verschieben am Ferritkern abgleichen.
(3)	LW	〃	285 kHz	285 kHz [166 mm (6 37/32")]	〃	CT6 (LW-Oszillatortrimmer) CT4 (LW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (2) und (3) wiederholen.
		(*1) Nach beendetem Abgleich ist der Antennenspulenkörper mit Wachs zu befestigen.					
		MW-HF-ABGLEICH					
(4)	MW	Aus einem Draht einige Schleifen-indungen bilden und das Signal in die Empfängerschleife abstrahlen.	550 kHz	550 kHz [12,9 mm (1/2")]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule	L8 (MW-Oszillatorspule) (*2) L2 (MW-Antennenspule)	Die maximale Ausgangsleistung einstellen. L2 durch Verschieben am Ferritkern abgleichen.
(5)	MW	〃	1500 kHz	1500 kHz [171,1 mm (6 27/32")]	〃	CT7 (MW-Oszillatortrimmer) CT3 (MW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (4) und (5) wiederholen.
		(*2) Nach beendetem Abgleich ist der Antennenspulenkörper mit Wachs zu befestigen.					
		KW-HF-ABGLEICH					
(6)	KW	〃	6 MHz	6 MHz [8 mm (5/16")]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule	L9 (KW-Oszillatorspule) L3 (KW-Antennenspule)	Die maximale Ausgangsleistung einstellen.
(7)	KW	〃	18 MHz	18 MHz [188 mm (7 13/32")]	〃	CT8 (KW-Oszillatortrimmer) CT5 (KW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (6) und (7) wiederholen.

■ FM-ABGLEICH

	WELLENBAND	SIGNALGENERATOR oder WOBBELGENERATOR: ANSCHLÜSSE	SIGNALGENERATOR oder WOBBELGENERATOR: FREQUENZ	STELLUNG DES ABSTIMM-REGLERS	MESSGERÄT (RÖHREN-VOLTMETER oder OSZILLOSKOP)	ABGLEICH	BEMERKUNGEN
		FM-ZF-ABGLEICH					
(1)	UKW	Über einen 0,001µF-Kondensator an den Meßpunkt ▼ anschließen. Den negativen Ausgang erden.	10,7 MHz	Der Abstimmpunkt, wo keine interferenz auftritt.	Die Vertikal-amplitude des Oszilloskops an den Meßpunkt ▼ anschließen. Den negativen Augang Meßpunkt ▼	T1 (FM-ZF-Abgleich) (Primärspule)	Die Maximalamplitude einstellen. (Siehe Abb. 12.)
(2)	UKW	〃	〃	〃	〃	T2 (FM-ZF-Abgleich) (Sekundärspule)	Die Maximalamplitude einstellen (Siehe Abb. 13.)
		FM-HF-ABGLEICH					
(3)	UKW	Über eine künstliche UKW-Antenne an den Meßpunkt ▼ anschließen. (Siehe Abb. 14.)	87,5 MHz	Drehkondensator ganz geschlossen.	Ausgangsleistungs-messer parallel zur Lautsprecher-Schwingspule	L5 (FM-Oszillatorspule)	(*3) Die maximale Ausgangsleistung einstellen.
(4)	UKW	〃	90 MHz	90 MHz [26,1 mm (1 1/32")]	〃	L4 (FM-Abstimmspule)	(*3) Die maximale Ausgangsleistung einstellen.
(5)	UKW	〃	106 MHz	106 MHz [168 mm (6 5/8")]	〃	CT2 (FM-Oszillatortrimmer) CT1 (FM-Abstimmtrimmer)	(*3) Die maximale Ausgangsleistung einstellen. Die Schritte (3) und (5) wiederholen.
		(*3) Es gibt drei verschiedene Ausgangsfrequenzkurven. Stimmen Sie die Mittelfrequenz ab.					

■ ABGLE

	F
	Bat

■ KANAL

	PRÜ
	Einstell Pilottor

■ NF-ABG

	EINST
	Vormag rungss
	Oszillat frequer Vormag erung
	Wieder gabepe

BEZ

1. S7-1~
2. S101-1
3. S102-1
4. S103
5. S104-1
6. S105
7. S106-1
8. S107
9. S108
10. S109
11. S110
12. S111-
13. S112-
14. S113
15. S401-
16. S402-

(3)	LW	〃	285 kHz	285 kHz [166 mm ($6^{17}/_{32}$")]	〃	CT6 (LW-Oszillatortrimmer) CT4 (LW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (2) und (3) wiederholen.
	(*1) Nach beendetem Abgleich ist der Antennenspulenkörper mit Wachs zu befestigen.						
	MW-HF-ABGLEICH						
(4)	MW	Aus einem Draht einige Schleifen-indungen bilden und das Signal in die Empfängerschleife abstrahlen.	550 kHz	550 kHz [12,9 mm ($^{1}/_{2}$")]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule	L8 (MW-Oszillatorspule) (*2) L2 (MW-Antennenspule)	Die maximale Ausgangsleistung einstellen. L2 durch Verschieben am Ferritkern abgleichen.
(5)	MW	〃	1500 kHz	1500 kHz [171,1 mm ($6^{23}/_{32}$")]	〃	CT7 (MW-Oszillatortrimmer) CT3 (MW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (4) und (5) wiederholen.
	(*2) Nach beendetem Abgleich ist der Antennenspulenkörper mit Wachs zu befestigen.						
	KW-HF-ABGLEICH						
(6)	KW	〃	6 MHz	6 MHz [8 mm ($^{5}/_{16}$")]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule	L9 (KW-Oszillatorspule) L3 (KW-Antennenspule)	Die maximale Ausgangsleistung einstellen.
(7)	KW	〃	18 MHz	18 MHz [188 mm ($7^{13}/_{32}$")]	〃	CT8 (KW-Oszillatortrimmer) CT5 (KW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (6) und (7) wiederholen.

■ FM-ABGLEICH

	WELLENBAND	SIGNALGENERATOR oder WOBBELGENERATOR ANSCHLÜSSE	SIGNALGENERATOR oder WOBBELGENERATOR FREQUENZ	STELLUNG DES ABSTIMMREGLERS	MESSGERÄT (RÖHRENVOLTMETER oder OSZILLOSKOP)	ABGLEICH	BEMERKUNGEN
	FM-ZF-ABGLEICH						
(1)	UKW	Über einen 0,001μF-Kondensator an den Meßpunkt ▼ anschließen. Den negativen Ausgang erden.	10,7 MHz	Der Abstimmpunkt, wo keine interferenz auftritt.	Die Vertikalamplitude des Oszilloskops an den Meßpunkt ▼ anschließen. Den negativen Augang Meßpunkt ▼	T1 (FM-ZF-Abgleich) (Primärspule)	Die Maximalamplitude einstellen. (Siehe Abb. 12.)
(2)	UKW	〃	〃	〃	〃	T2 (FM-ZF-Abgleich) (Sekundärspule)	Die Maximalamplitude einstellen (Siehe Abb. 13.)
	FM-HF-ABGLEICH						
(3)	UKW	Über eine künstliche UKW-Antenne an den Meßpunkt ▼ anschließen. (Siehe Abb. 14.)	87,5 MHz	Drehkondensator ganz geschlossen.	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule	L5 (FM-Oszillatorspule)	(*3) Die maximale Ausgangsleistung einstellen.
(4)	UKW	〃	90 MHz	90 MHz [26,1 mm ($1^{1}/_{32}$")]	〃	L4 (FM-Abstimmspule)	(*3) Die maximale Ausgangsleistung einstellen.
(5)	UKW	〃	106 MHz	106 MHz [188 mm ($6^{5}/_{8}$")]	〃	CT2 (FM-Oszillatortrimmer) CT1 (FM-Abstimmtrimmer)	(*3) Die maximale Ausgangsleistung einstellen. Die Schritte (3) und (5) wiederholen.
	(*3) Es gibt drei verschiedene Ausgangsfrequenzkurven. Stimmen Sie die Mittelfrequenz ab.						

■ ABGLEICH DER LEUCHTDIODEN-ANZEIGE

PRÜFUNG	EINSTELLUNG	BEMERKUNGEN
Batterieprüfung	VR301	1) Über die Gleichstrom-Eingangsbuchse DC In eine Gleichspannung von 8,5V Zuführen. 2) Spannungskonstanthalter (VR301) so einstellen; daß die sechste Leuchtanzeige von recht aufzuleuchten beginnt.

■ KANALTRENNUNGS-ABGLEICH

PRÜFUNG	SIGNAL 90MHz, 60dB, SOURCE-ANSCHLUSS	GERÄTEANSCHLUSS (ELEKTRONISCHER ZÄHLER)	EINSTELLUNG	ANGABEN	BEMERKUNGEN
Einstellung des Pilottons	—	▼...(+)seite ▼...(−)seite	VR1	19kHz	Mit dem elektronischen Zahler den Spannungskonstanthalter (VR1) aut 19kHz (±200Hz) einstellen.

■ NF-ABGLEICH

EINSTELLUNG	EINGANG	MESSPUNKT	MESSWERT	EINSTELL-PUNKT	BEMERKUNGEN
Vormagnetisierungsstrom	—	▼(linker Kanal) ▼(rechter Kanal) ▼(Masse)	4,1±0,2mV (für CrO_2-Band)	VR101 (Linker Kanal) VR201 (rechter Kanal)	bei Aufnahme Oszillator → I
Oszillations frequenz für Vormagnetisierung	—	▼ ▼	47.5 kHz±0.3 kHz (für CrO_2-Band)	L301	bei Aufnahme Oszillator → I
Wiedergabepegel	QZZCFM (315Hz, 0dB)	DIN-Buchse	—	VR202 (rechter Kanal)	bei-Wiedergabe

BEZEICHNUNGEN IN DER SCHEMATISCHEN DARSTELLUNG

1. S7-1~S7-10 .....Wellenbereichsschalter auf "UKW". (1...UKW, 2...LW, 3...MW, 4...KW).
2. S101-1~S101-9...Aufnahme/Wiedergabeschalter auf "Wiedergabe". (1...Wiedergabe, 2...Aufnahme).
3. S102-1~S102-6...Funktionsschalter auf "Cassette". (1...Cassette, 3 . . . Radio).
4. S103 .....Anzeigenwähler auf "AUS". (1...AUS, 2...Batterie, 3...Ausgangsleistung).
5. S104-1~S104-3...Bandsortenwähler auf "Normal". (1...Normal, 2...FeCr, 3...CrO_2).
6. S105 .....Oszillator-Schalter auf. (1...I, 2...II).
7. S106-1~S106-2...EIN/AUS-Schalter des Motors auf "AUS".
8. S107 .....Betriebsart-Schalter (Abgebildet in der Stellung "Stereo"). (1...Stereo, 3 . . . Mono).
9. S108 .....Wahlschalter für Gleichstrom-oder Wechselstrombetrieb auf "Gleichstrom".
10. S109 .....Spannungswähler.
11. S110 .....Schnellvorlauf-, Wiedergabe-/Rückspul-Schalter in Stellung "Rückspulen"
12. S111-1~S111-3..Eingangswähler (abgebildet in der Stellung "DIN-Eingang"). (1 . . . DIN-Eingang, 3 . . . MIC-Eingang).
13. S112-1, S112-2..."Zirp"-Schalter in Stellung "AUS"
14. S113 .....Memory-Rückspulschalter in Stellung "AUS"
15. S401-1~S401-3..Automatik-Schalter in Stellung "AUS"
16. S402-1, S402-2..Automatik-/"Schlaf"-Schalter in Stellung "AUTO"
17. S403-1, S403-2..Zeiteinstell-/Lichtschalter
18. S404 .....Minuten-Einstellschalter
19. S405 .....Stunden-Einstellschalter
20. S406 .....Zeitanzeigeschalter in Stellung "UHRZEIT"
21. S407 .....Betriebsartenschalter in Stellung "UHR" [(1) . . . Uhr, (2) . . . Bandzählwerk]
22. S408 .....Schalter für wiederholten Weckalarm/Löschung der "Schlaf"-Einstellung
23. S409 .....Bandzählwerk-Rückstellschalter
24. Für die Bauelement, die mit Δ bezeichnet sind, sollen aus Gründen der Betriebssicherheit nur die Originalbauteile des Herstelles verwendet werden.
25. Alle Gleichspannungen sind mit einem Elektronik-voltmeter vom negativen Batterieanschluß aus zu messen. □...Stellung "FM", ( )...Stellung "AM".
26. Batteriestrom: ohne Signal 120mA
    bei maximaler Ausgangsleistung (Radio) 1.1A
    bei maximaler Ausgangsleistung (Cassette) ... 1.3A
27. VR1 .....Einstellung der Spannungsgesteuerten Oszillatorfrequenz.
    VR101, 201 .....RW zur Einstellung des Vormagnetisierungsstroms.
    VR202 .....RW zur Einstellung der wiedergabeverstärkung.
    VR103, 203 .....Lautstärkeregler.
    VR104, 204, 105, 205.....Klangregler.
    VR301 .....Leuchtdioden-Pegelregler.
28. Die Markierung (▼) bezeichnet einen Meßpunkt, z.B: ▼= Meßpunkt 1.